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13–19 November 1986

Vol 5 No 46

Amstrad axes hard disc guarantee

Full story on page 4

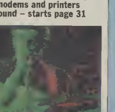
FEATURES

Acorn's Master Compact (below) reviewed, plus Firebird's Sentinel and Ariola's Bard's Tale in colour

SPECIAL supplement

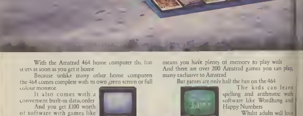
THE PERIPHERALS BUYERS' GUIDE

The best mice, monitors, modems and printers around – starts page 31





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Amstrad axe for warranty

AMSTRAD is taking steps to minimise its liability for any problems users have with its hard disc PCs. A recent circular sent out to PC dealers says that customers are being "strongly advised" to purchase a maintenance contract along with the PC and states that "in the event that units are sold without professional (and approved) service cover neither Amstrad nor the distributors can be held liable for the warranty of the hard disc mechanism."

According to a spokesman this means that the user's only comeback is against the dealer, and that the dealer cannot claim against Amstrad "unless they can demonstrate that the machines have been properly handled".

The end user's position is further complicated by Amstrad's decision to place a warning on both the carton and the machine. This describes a maintenance contract as "absolutely essential" and states that "transportation and installation of this system should be carried out by qualified personnel only".

The circular also stresses that it is important "that the retailer or dealer explains the situation to the customer prior to the purchase so that a customer who later encounters difficulties cannot say he was not aware of the position when he bought the machine".

So if you buy a machine without a maintenance contract and it goes wrong, you will have no warranty.

David Tench, legal advisor to the Consumers Association, felt that there was nothing intrinsically wrong with Amstrad's warnings and even welcomed the fact that the company was stressing the importance of maintenance. He did however feel it was important that "putting right problems was not cloaked by being classified as maintenance". "A maintenance contract would be helpful to a customer trying to prove that a machine was defective when bought, but it's not legally essential, and if the machine was faulty when sold you have recourse against the dealer."

That said, anyone buying an Amstrad hard disc machine would be well advised either to take out a maintenance contract with it or to plump for a third party hard disc unit.

● Amstrad is still insisting its PCs don't overheat, but is now fitting a fan as standard with its hard disc machines. It can be bought as an extra for the floppy versions for £19.95.

"The fitting of this fan is a waste of money," commented Alan Sugar, "but it will keep some people happy. I recommend that operators switch the fan off. It'll save on electricity and won't make any difference to the operation of the machine."

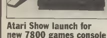
Smiths to take range of Mastertronic titles

FOLLOWING the controversy over the sudden drop in Mastertronic's presence on the Gallup chart (see *Popular Computing Weekly* October 23) the budget software company has announced that a selection from its range is now being taken by W H Smith.

It was W H Smith's inclusion on the Gallup panel a month ago which led to Mastertronic's dominance of the chart disappearing dramatically. At that time W H Smith did not stock any Mastertronic titles.

Alan Sharam of Mastertronic would only say that he "was delighted that our products are now in W H Smith".

It is not clear whether it was the retailer or Mastertronic which made the first moves towards including the titles.



Atari Show launch for new 7800 games console

ATARI is to launch its new games console, the 7800, at the Atari Christmas Show later this month. The machine will cost £69.95, slightly higher than predicted but still under its Sega and Nintendo rivals, and although it will run more spectacular games than its predecessor the 2600 it will run all the earlier cartridges too.

It's expected in the shops before Christmas.

Zenith cuts prices and aims for Amstrad

PC compatible manufacturer Zenith Data Systems is going for Amstrad's jugular, combining swingeing price reductions with the launch of a new machine based on the Intel 80386 superchip.

Zenith isn't recommending new retail prices for its PCs but is instead offering (and publicising) dealer prices comparable to Amstrad's. Assuming dealers' mark-ups will be comparable to those on the Amstrad PC this will mean that floppy-based Zeniths will be rather more expensive than Amstrads but that hard disc models will be marginally cheaper.

Zenith is currently looking for 100 new dealers to participate in what it terms "Operation Sugar", and is campaigning on the slogan "Isn't it time you started a Sugar free diet?" The high-end 80386 machine is in the same bracket as Compaq's Desk Pro 386 and is two steps on from the 8086 chip used in the Amstrad PC. Amstrad itself has gone on the record as saying it isn't currently interested in machines based on the 80286 or 80386 chips.

Commodore profit up again

COMMODORE turned in a profit for the second quarter in succession last week, showing post tax profits of \$3.7 million (about £2.4 million) on turnover of \$176 million (£117 million) for the three months to September 30.

The turnover was 11 per cent up on the same period last year, when Commodore lost \$39 million. Earlier this year Commodore turned in a small pre-tax profit, but tax took this back into a small loss.

Boots drops 6128

BOOTS is to drop the monochrome version of the Amstrad 6128 from its range of micros in response to poor sales. The company will however continue to stock the colour version of the machine. Mono machines still in stock are being reduced to £199 to clear.

News Desk

Acorn to go for 68000?

THE 68000 chip moved a little closer to widespread acceptance last week with the news that Thomson, Olivetti and Acorn are working on a "European Education Standard Microcomputer" for release next year.

The machine will run Microware's OS 9/68000 operating system and although the project's instigators are keeping quiet about it, Paul Dayan of Soft Centre, UK distributor of OS 9, says that it will be priced "suitably" and that its potential market runs into millions in both schools and small businesses.

Thomson appears to be the main force behind the project and as a French company is likely to be able to sell the machine widely in French schools. The Olivetti/Acorn input is more surprising as Olivetti has hitherto stuck almost exclusively to the PC standard and Acorn's plans, although wide-ranging at times, are not known to have included the 68000.

Olivetti itself has had some success in getting its PCs into educational establishments and is currently selling Acorn's Master Compact in Italy while Acorn has badged Olivetti's pricey M19 PC. The 68000 machine will however give the companies an opportunity to offer an alternative to the PC and standardisation across the three companies should give the machine a good chance of success provided the price is reasonable as well as suitable.

Our man at Savoy is top of the Pops

THE National Computer Games Championship organised by MikroGen has been won by a *Popular Computing Weekly* reader.

David Litherland, 17, from Horwich, entered the championship through the application form printed in *Popular* earlier this year. Last week he attended the grand final held at the Savoy Hotel in London, competing for the title against nine other candidates. He beat the opposition comfortably, scoring over 27 000 on MikroGen's new game *Cop Out*.

Christopher Kenny, representing the East Anglian Times, came second scoring just over 21 000.

David's prize, apart from a trophy donated by MikroGen, was a cheque for £200.

Amstrad in education

AMSTRAD'S PC received a boost last week with the announcement that Aston University had placed "a large order" for the machines. Amstrad coyly declined to say how many but Aston already has 120 IBM PCs and 220 Macintoshes so the numbers are likely to be of that order.

The first batch has been delivered to lecturers but the low price of the Amstrad makes it attractive to a wider audience. "IBM and Apple are well outside a student's reach," says Aston computer operations manager Tony Bell, "but the lowest cost Amstrad could just about be within their budget."

City Business Systems, which is supplying Aston's PCs, claims to have already shipped several hundred of the machines into colleges and describes them as "ideal for the educational market".

The field is however crowded. Acorn may no longer be a presence in the home market but maintains influence in education while Atari is beginning to take advantage of higher education's interest in the 68000 chip.

Because of its high power and low price the ST will be a particularly dangerous rival here.

Software Hotlines

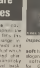
Melbourne House obviously looking to capture the *Impossible Mission* fans this Christmas ... its range includes *Judge Dredd* and *Knucklebusters*, both of which feature well animated characters running frantically along a three level background. *Judge Dredd* (*Impossible Mission* meets *Jet Set Willy*) is a race against time to prevent crime in Megacity One while in *Knucklebusters* (*Impossible Mission* meets *Martial Arts*) you are trying to escape being turned into an android.

Melbourne House is also responsible for *Bazooka Bill*, a multi screened arcade shoot 'em to bits if it moves blast it game. Others in **Melbourne's** repertoire this Christmas include of course *Fist II* and *Asterix*, but not necessarily *Dodgy Geezers* any more we understand.

Apparently the condensed version of the **Lever-Jones** (of *Hampstead* and *Terromolinos* notoriety) creation has gone AWOL.

Still *Dodgy Geezers* should make it for January, as should *Inspector Gadget* from the cartoon strip aiming to out Clouseau Clouseau (picture above). *Knuckles*, *Bazooka*, *Judge Dredd* and *Gadget* are all definites for the Commodore followed by Spectrum conversions.

Who wants the latest news on the Beyond does it-or-doesn't it saga? Well, the high command at **Telecomsoft** has come up with a new slogan for the Star Trekkers "software worth waiting for". Good job really.



Inspector Gadget

CRL goes bookware at the end of this month with Fergus McNeill and Jason Somerville's *Murder off Miami*, a mystery/adventure based on Dennis Wheatley's book of the same name. The game is set in the 1930s and, Crockett and Tubbs being unavailable owing to a not born yet situation, you play detective Kettering called in to investigate an alleged suicide.

It all sounds a little more laid back than the Miami we know and love, but don't bet on it – **CRL** plans a follow up called *Malinsay Massacre* for 1987. *Murder off Miami* is £7.95 and available on Spectrum, 64 and Amstrad.

Sumurai, also from **CRL**, seems to revolve around a Buddhist sect which, eschewing the normal "be really nice and serene and don't step on the ants" approach, chops you up with large two edged swords. Your team of Samurai and Ninjas has to go into the temple and sort them out.

CRL claims it's "an exciting strategy game", but we have our doubts about the strategy bit. Out on the Spectrum next month, £9.95.

Bazooka Bill


CAPTURED
Commodore
£9.95 Tape £14.95 Disk

Souped-up Gem plus comms for Amstrad PC

DIGITAL Research has announced a range of new packages running under Gem, its graphics based operating environment.

Many of the products are tailored for the new Amstrad PC1512, and all of them can be added to the 'reasons to buy' list of anyone looking at this latest IBM clone.

Called Gem XM, the enhancement acts in similar fashion to Apple's *Switcher* on the Macintosh, allowing you to load several applications into the machine and switch quickly and easily between them.

Gem XM provides a cut and paste facility between all applications, whether they are Gem based or running under MSDOS or PCDOS.

DR recommends a minimum hardware system of 512K RAM and a hard disc or RAM disc. Gem XM is currently being shipped as bundled software with some hardware systems but will be available retail in January for £69.95 excluding VAT.

The second product is an Amstrad-specific communications package, called *Gem Comm*, which reads like a wish-list of comms software features.

It runs under Gem using the WIMP environment to the full, supports just about every kind of transmission rate and data type, handles UK and Hayes protocols with equal ease, and costs £99.95 including VAT.

Gem XM plus applications

The third product is another upgrade, this time to *Gem Draw*.

The improvements include the ability to treat groups of elements as single structures, building up a complex design a stage at a time, the ability to flip elements horizontally and vertically and to perform 90-degree rotations, together with enhanced copying, rescaling and alignment.

Gem Draw Plus also has added type fonts and sizes.

An Amstrad-specific package will be available from January priced at £99.95 including VAT. Versions for other IBM and compatible systems will cost £199.95 excluding VAT and will include the full Gem systems software, *Gem Desktop* (both of which are bundled with the Amstrad) and the *Gem Draw Business Library*.

Palace seeks staff for major expansion

PALACE Software, until now thought of as one of the more shy and retiring of the games software houses, has expansion plans and is looking for programmers and designers.

According to Palace managing director Pete Stone, there's no real upper limit to the number of people the company will be recruiting, not because Palace has an infinite quantity of money but because it's unlikely that we will be so inundated that an upper limit will be reached.

Stone: Moving up

Part of the expansion program will involve increased work on the IBM and ST, which Stone sees as the machines of the future, and he feels they will require a different kind of program. "In the States games are played by people in their 20s and 30s," he says, "and things will begin to change in Europe as well.

"This market will need a more thoughtful type of game: flight simulators, adventure type games, mind games or puzzle games." At the moment he sees the ST as the key to this, although the Amstrad PC is likely to follow shortly.

Panic stricken Spectrum, Commodore and CPC owners can however breathe again. Although he sees their market eventually disappearing, he feels they could be around for as long as another five years "and they'll continue to get software support".

Amstrad defies yen and cuts the cost of its 3 inch discs

AMSTRAD has reduced the price of its CF2 blank discs to £2.99 in what is described as a long predicted move. The company says that it's previously been impossible to reduce the price due to a general shortage of discs plus high production and freight costs, but now claims to have overcome these problems.

Most of the company's 3 inch discs are, however, made in Japan, and the strength of the yen was recently cited by Amstrad as a prime reason for a 12 per cent price rise on the PC. Quizzed on this paradox an Amstrad spokeswoman said the company had been able to cut the prices by "clever sourcing", but refused to be drawn further.

It is, however, unlikely that a similar breakthrough will occur on the Amstrad PC's price while demand remains high.

Footnotes

GREAT Presentations of Our Time Volume 5, Number 15. At last week's Amstrad in the City seminar ADT marketing director David Randall opened his mouth and put a foot in it with "we are in fact a stocking distributor".

Socking it to the audience like this is all very well, but there is a danger that people will start associating networks with fishnet works.

At the same seminar organiser C/WP's programme showed how fast things can move in the computer industry. At 2pm the introduction was presented by Richard Baer, managing director, C/WP Computers, but by 4.50pm Robin Adda, managing director, C/WP Computers, was able to bring proceedings to a close.

The proceedings had incidentally been held in the Sugar Room of Whitbread's brewery – this may qualify as the tackiest piece of grovelling of the year, provided nobody tells The God Alan what breweries do with sugar.

Amstrad bids for stardom in the City

AMSTRAD'S furious reaction to recent suggestions that its PC could be unreliable speaks volumes about the company's plans for the machine. In order to become a world force in business computing Amstrad has to sell large volumes to big companies, to the corporate market, and unless the company can contain the whispering campaign about the PC it won't be able to persuade the big buyers to bite.



Miller: A heated defence

Whether it succeeds or fails, Amstrad's commitment to the corporate market has implications for its other machines. As the company concentrates on the business machines the home machines are liable to suffer from neglect, and the PC's launch inevitably spells trouble for the PCW.

The price rise on the PC will help differentiate it from the PCW in the short term, and a massive advertising campaign for the latter will also help shore up sales, but their roles are still too similar for them both to survive in the long term.

Amstrad marketing manager Malcolm Miller was talking about the two last week at an Amstrad in the City seminar organised by C/WP Computers. "The PCW," he said, "is there as a word processor. The PC runs word processing software, but it's not really a word processor."

Miller may be privy to some information that shows that the Z80 processor is more suited to word processing than the 8086, but the fact of the matter is that both the PCW and the PC are computers, and Amstrad can't sustain the argument that they're not for long.

But while the PC is the logical successor to the PCW in the small business market, Amstrad will have to work if it's to break through into big business, and although Amstrad itself didn't organise last week's seminar this is basically what it was all about.

The speakers were keen to scotch any stories of unreliability. David Randall, marketing director of ADT, said that his company had tested the PC with "a wide range of products" and found no difficulties with either overheating or the power supply.

But he did tacitly admit that the rating of the PC's power supply could be too low for some tasks. Installing a Western Digital hard disc in exchange for one of the machine's floppies, for example, would result in a 40 per cent reduction in power draw, and this makes it "ideal for use in the Amstrad".

Similarly he extolled the virtues of high capacity hard drives. "They have their own independent power supplies, so the power limitations on the Amstrad are not a problem."

Randall claims to have tested products in conditions "in excess of Amstrad's rating (for the power supply) without running into problems", but it's clear that Amstrad's power supply doesn't have the output of IBM's.

In the same vein Malcolm Miller pointed out that Amstrad had taken PCs and "baked them beyond normal use, and beyond what some of the press have written about", but this isn't exactly the point.

If an expansion card draws more power than is available a fuse will blow, and this will happen no matter how many ovens you put a machine in.

The power problem, of course, isn't exactly Amstrad's fault. Most IBM add-on cards will run in the PC without problems, but certain combinations draw too much power, and can cause trouble under certain circumstances.

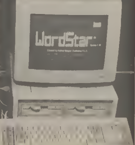
The reason the problem arises is because the original IBM had a large chip set drawing a fairly substantial amount of power and had card slots designed to cope with similarly chunky expansion cards. Amstrad's systems are technologically more petite, and both the power supply and the card slots are rated lower than those on the IBM. So an expansion combination that pushes the IBM PC to its limit will almost certainly blow the Amstrad's fuse.

If you view this as Amstrad paying for IBM's deficiencies you should start to understand the former's indignation on the subject. Amstrad also has the right to be slightly miffed by the way the matter has been blown up. Practically all expansion cards will work with the Amstrad, and only a few relatively old designs will cause problems, usually when several are being run together.

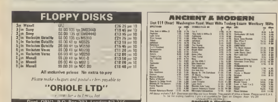
IBM itself has got off lightly in the compatibility stakes purely because it set the standard in the first place, and since then it has launched four machines (the Junior, PC Portable, AT and Convertible) which aren't fully compatible with the PC.

Amstrad's record is short, but so far better, and the company has some hopes of supplanting IBM. "The standard is going to be with us for many years," says Miller. "Some people have termed it the Amstrad standard. Maybe IBM will leave it alone and concentrate on other areas."

He didn't specify who had termed it the Amstrad standard, and at the moment is unlikely to convince many people that IBM is on the point of walking away from the PC mass market, but given the power of the opposition his uncharacteristic use of the word "maybe" is understandable. So far Amstrad has had to cope with nasty rumours and a dickering share price, but what would happen if IBM really started to get worried?



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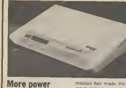
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More power from Moneywise

MONEYWISE Software which wrote *FT Moneywise* has released a new version of the program for the Amstrad PC 1512. The program is called *Moneypower* and costs £99. It retains all the original product's features and also contains extras including a fully prepared cash flow model with graphs and projected profit and loss.

Details from Moneywise Software, 899 London Road, North Cheam, Surrey SM3 9DL. Tel 01-337 0663

Price cut on Amiga spreadsheet

GRAFOX has cut the price of *Logistix*, its integrated spreadsheet and time planning package, from £245 to £149 to coincide with Commodore's current special offer on the Amiga. "We feel that Commodore has made the right move and are going to sell a lot more machines with this price cut," says Grafox marketing manager Ian McCalle. "With *Logistix* at £149 we will now see it become the most important spreadsheet on the Amiga."

Details from Grafox, 65 Banbury Road, Oxford OX2 6PE. Tel 0865 516281

Pace launches smarter modem

PACE has introduced Series Four, a new range of intelligent data modems. The modems are designed to cater for data transmission at 1200 and 2400 baud full duplex but also include V21/V23 for use with 300/300 and 1200/75 split baud rates. The modems have auto dial and auto answer plus full speed buffering, baud rate detect facilities and a 32 character LCD.

They also have a printer port fitted as standard allowing incoming messages to be received and dumped to a printer even if the modem is being used independently of a host computer. The basic model is £265 while adding 1200/1200 brings the price up to £479 and 2400/2400 to £619.

Details from Pace Micro Technology, Juniper View, Allerton Road, Bradford BD15 7AG. Tel 0274 488211

Be your own AI expert

PAL Software has produced a £49.95 expert systems package running under MSDOS and Concurrent Dos. *PAL II Trainer* is based on *Intelligence 1*, a software package that uses artificial intelligence techniques to build expert systems and although it's presented as a teaching package allows users to develop full scale expert systems.

It will operate on the IBM PC and compatibles and Apricot machines and consists of two discs, a jargon free manual and function key templates.

Details from PAL Software, PO Box 24, Ollerbarrow House, Ashley Road, Altrincham, Cheshire WA15 9TQ

Online typesetting

ELECTRONIC mail service One-to-One has linked up with computer bureau Wordstream to provide a typesetting service. Customers send raw copy to Wordstream via One-to-One with codes to indicate size, style and fonts and Wordstream then runs it through a typesetting machine.

Wordstream claims this system can save up to 90 per cent of typesetting costs and guarantees to turn the copy round within an hour of receipt.

Details from Wordstream, Victoria Chambers, Fir Vale Road, Bournemouth BH1 2JN. Tel 0202 294347

Diary Dates

NOVEMBER

15 November
Wales and West Computer Show
Central Hotel, Cardiff
Details. All types of home computer and support
Price £1 adult, 50p children
Organiser Preston Exhibitions 0656 880965

21–23 November
The Commodore Computer Show
Novotel, Hammersmith, London W6
Details Hardware, software and peripherals for the Commodore range of computers
Price £3 adults, £2 children, £1 discount for advance booking
Organiser Database Exhibitions 061 456 8835

22 November
6809 Show
Old Halls of the Royal Horticultural Society
Details Show for the Dragon and Tandy Colour Computers
Price £2.50 adult, £1.75 children reduction for advance purchase
Organiser Jenny Pope, Microdeal 0726 68020

28–30 November
The Atari Christmas Show
New Horticultural Hall, Greycoat Street, Westminster, London SW1
Details Hardware, software and peripherals for the Atari range of computers
Price £3 adult, £2 children, £1 discount for advance booking
Organiser Database Exhibitions 061-456 8835

29 November
Wight Computing Fair
Ryde Town Hall, Ryde, IoW
Details Local show covering wide range of subjects
Price N/A
Organiser Wight Computing Users Group, 10 John Street, Ryde, Isle of Wight PO33 2PY

Prices, dates and venues of shows can vary and you are therefore strongly advised to check with the show organiser before attending. *Popular Computing Weekly* cannot accept responsibility for any alterations to show arrangements made by the organiser.

Clearly moral

The discussion on software copying devices (Appalled by Amstrad Letters October 30) is very interesting but here s the crunch question

A person buys a program from a firm which doesn t give permission for back-up copies to be made The user makes a back-up for their own peace of mind with no dishonest intent Is any offence committed?

According to you yes But I say no There is nothing dodgy about it The Copyright Act 1956 permits what is called "fair dealing for amongst other things private study research or review Fair dealing means what it says if you re moral you re in the clear

Peter S Erskine
Colchester

See this week's Ziggurat.

The Shadow replies

Anyone who has typed in my Shadow Ram Access program from Bytes and Pieces in *Popular* October 23 must be a little puzzled as to what the program actually does and how to use it

Unfortunately in cutting my original documentation from an excessive two pages to two paragraphs this information somehow went astray Here for anyone who is interested is a more complete program description

Firstly, the program will run on any Atari with at least 64K The program does access the additional bank switched 64K of the 130XE but allows the use of Ram in the 40–60K area, normally occupied by the Basic and OS Roms

To use the program type in the listing as printed Run it and the program will re-write itself Now delete line 20 and the remaining line consisting mainly of graphic characters is all that is needed to use the program

It is used in the form *X=Usr (Adr(Move$) source destination pages* and can be used to move pages of memory eg screens in and out of the shadow Ram

However you must be careful not to store anything in the 52–54K area as this is I/O mapped memory used by the Atari s custom chips and corrupting this area is liable to crash the machine

A W R Crawford
Penicuik

Puzzled by the puzzle?

I write to correct wrong assumptions in your Puzzle section

In answer to Puzzle No 226 you state that taking only one ball from any of the three boxes will show the contents of each This is wrong Taking a ball from box three will do this as it must contain two identical balls and the contents of the other two boxes can then be identified

In your illustration you show the effect of taking a red ball from box one which identifies each box however if the ball taken from box one is white then its partner could be red or white making identification impossible

Nigel Parsons
Cardiff

Star Letter

The angry, but op

Before buying *Popular Computing Weekly,* October 30 I was a normal optimistic computer owner Now I am an angry but still a very much optimistic computer owner I hope this letter will go some way to restoring my hopes for the future of the computer industry

I was horrified by the piece by Antony J Shepherd in the Ziggurat His conclusions, that the advanced and user friendly computer power offered by the new 16/32-bit computers will fail to attract buyers because of the admittedly sizeable software base of such micro computing geriatrics as the IBM PC are nothing short of lunacy

True many new machines based on 8-bit technology have been launched in the past months but to write off such machines as the ST Amiga and the Macintosh as mavericks smacks of someone content with unfriendly expensive, underpowered IBM PC clones

Like nearly all ST owners I am enamoured with its capabilities It is fast reliable friendly inexpensive and has a rapidly-growing software base Can any IBM machine match *all* these five? I doubt it The Amstrad PC and other clones will be okay for a few years but the limit to Ram of a tiny 640K has and will continue to, seriously test the patience of users The ST with its maximum address range of 16Mb will not have such problems until well after its useful lifespan The list of ST specific software now runs to well over 600 titles far far in excess of the number available for the PC in its first year These titles are cheap friendly usable and *do not* contain any serious bugs I can think of no ST software made unusable by bugs so Mr Shepherd is quite clearly a material inaccurist

Now to the Apple IIGS and its elder brother the Mac The GS may not catch on over here where the old Apples never really got anywhere but do not dismiss its poten

The point about only removing one ball to determine the contents of each box, is that the ball must be removed from the box labelled White/Red As each box is wrongly labelled, there must be two balls of the same colour in that box If you pick a red ball from

Puzzle

Puzzle No 233

Here s a teaser! remarked Jamie to Ben Seizing a piece of chalk he wrote the numbers 2 15 and 24 on the blackboard Now I bet that you can t tell me the next number in that series said Jamie confidently

Ben thought for a while made a few calculations scratched his head and then declared, ' I can t see any connection between them So what s the answer?

Well replied Jamie each of these numbers is equal to half of the sum of its digits multiplied by the product of its digits For example, twenty-four is half of six times eight

Ben was unimpressed but Jamie continued Now you will be able to tell me the next number in the series!

But Ben wasn t able to Can you?

Solution to Puzzle No 228

Answer The multiplication was 7226 x 6472 = 46766672 The colours of the numerals in the product was therefore Y B R B B B R G

Solution· We need to find the values of the coloured numerals red green blue and yellow We know the position of each type of digit in the multiplication sum so by assigning values to the variables R, G B and Y various possible products can be computed These are tested in turn to see if they consist of eight digits each of the digits is one of the digits (colours) being used and that the left-hand digit is the same value as the yellow digit

This results in only the one answer

Winner of Puzzle No 228

The winner this week is M J Owers of Southfleet Kent who will receive £10

Rules

The closing date for Puzzle 233 is December 1st Answers on a postcard please

```
[illegible]
```

t optimistic ST owner replies

tial in the American market. The Apple II has a vast software and user base in the States, making the GS quite an attractive proposition to Apple II owners wishing to upgrade. The Mac has an excellent library of software, friendly and powerful though expensive; it remains, quite intentionally, a business computer. And I challenge anyone to find any review of the Mac describing it as a toy.

The Amiga has amazing graphics and sound capabilities, which remain, as yet, untapped by all but a handful of Electronic Arts titles. Amiga software is also much cheaper than on an IBM. (Can he defend paying £400 for a wordprocessor?) Multi-tasking is standard, though slow for non graphic work and only limited by memory. A 68020 Amiga will have no such trouble. Commodore needs a good kick up the backside for not making enough of this masterpiece of technology.

His statement that a machine with no standard operating system is going to be a dead duck conforms with the lunacy of his whole argument. I don't recall anyone describing the ST as a dead duck. The Amstrad CPCs had no standard operating system, neither did the BBC or the Mac. They seem to be flying well for dead ducks, don't they?

Mr Shepherd also ignores the possibilities of the new machines: artificial intelligence, CAD, multi tasking. All of which are made as difficult as possible by the PC standard. It's about time people started to look at more than just software as selling points. True, software maketh hardware, but if everyone thought this way we would all be using PC clones. I can think of nothing more depressing, can you?

This letter was written on a 1040ST with *1ST Word Plus*, an excellent, bug free wordprocessor.

Richard Scott
Shenfield
Essex

the W/R labelled box, the other ball in that box must be red.

Therefore W/W must be the box labelled R/R since it cannot be in the box labelled than W/W, leaving W/R in the box labelled W/W. The solution can be worked out the same way if a white ball is picked from the W/R box.

Thank you for pointing this out; the solution we printed was less than clear. However, Alan Northcott, the winner, knew exactly what he was doing with the boxes, so no injustice was done.

Kenn Garroch – wanted!

Looking through past copies of *Popular Computing Weekly* I start to wonder who is this Kenn Garroch? From the photograph he looks like a wanted person from *CrimeWatch*!

D O J Hiscock
Chertsey

Any helpful QL readers?

I am having difficulty in understanding the various commands pertaining to the QL (which my son has very graciously bought for me!), despite constant reference to the very excellent instruction manual, and would like a reader to allow me to write to him (or her) and put a few questions regarding its use, enclosing, of course, a stamped and addressed envelope. A reader's help would be greatly appreciated.

Edward Ogilvie
3 Orwell Drive, Keynsham
Bristol
Avon BS18 1QB

Popular Chess – now post-free

With the *Popular* vs *Colossus* Chess tournament getting into its stride, and so many people entering regularly, Inter Mediates, our organiser, has generously offered to help you save on all that postage spent sending off the entries every fortnight.

From now on, *Popular Chess* entrants may send their suggested moves to the company's Freepost address. No stamps needed.

The one catch to this is that Freepost is sometimes not as fast as first class mail, so if you are sending in your entry with little time to spare, it may be better to use a stamp and the original address. Both addresses are printed below.

This week's moves

On with the game. In Game one, the Readers team, playing Black, has blocked *Colossus's* check by moving a pawn out (see diagram). *Colossus's* reply was to remove said pawn.

In Game two, the Readers are playing White and opted to put *Colossus* in check with the knight. In response, *Colossus* has removed the knight.

Make your move

Send your suggestions (one suggestion for each game per person, please) for the Readers next move to *Popular Chess*, Unit 2, South Block, The Maltings, Sawbridgeworth, Herts CM21 0PG with a stamp or the new Freepost address **Inter-Mediates (*Popular Chess*), Freepost, Sawbridgeworth, Herts CM21 9YA**. If you are using Freepost the postcode is essential and please mark the card *Popular Chess* – it'll get dealt with much more quickly. Closing date for entries is November 19.

Prizes

This isn't all for nothing, you know. There's a British Museum reproduction Arran chess set up for grabs for the person who suggests the greatest number of accepted moves in each game, and five runners-up prizes of *Colossus Chess 4* for the most consistent entrants.

Game one

1	Pe2–e4	Pa7–a5
2	Ng1–f3	Nb8–c6
3	Bf1–c4	Ng8–f6
4	Nf3–g5	Pd7–d5
5	Pe4xd5	Nc6–a5
6	Bc4–b5+	Pc7–c6
7	Pd5xc6	?

Game two

1	Pe2–e4	Pc7–c5
2	Ng1–f3	Nb8–c6
3	Pd2–d4	Pc5xd4
4	Nf3xd4	Pe7–e5
5	Nd4–b5	Pa7–a6
6	Nb5–d6+	Bf8xd6
7	?	

Printing advice needed

In one of your recent issues of *Popular Computing Weekly*, you described, as I recall, a method of printing at near letter quality on a Commodore 64 and various printers.

I wonder if anyone could kindly suggest a routine for this to operate on the PMS 802. I would also be grateful if anyone could inform me of a routine which allows the above to be used as a typewriter, direct from the keyboard.

G N Caine
Rochdale

A trip down memory lane

The BBC Master Compact is the latest of Acorn's machines to use the BBC technology Duncan Evans supplies the details

The BBC Master Compact is Acorn's bottom of the range computer, designed to compete in the Amstrad market with its built in disc drive and colour monitor

The Compact is, of course, a repackaged Master 128 but without all the frills. Initially the system, comprising of a keyboard, plinth housing the power supply, disc drive and monitor looks very stylish, but then again the BBC always was attractively designed, until all the connecting wires have to be fitted and then things take on a more sloppy appearance Power, disc and monitor cables all have to be connected to the plinth The colour monitor, as well as looking good with its cream and beige housing, gives a very clear and steady display.

The interfaces were one of the BBC s strong points but in order to cut costs (an un-Acorn like move if ever there was one) some of the best loved ones have gone The User port analogue port, cassette 1MHz bus TV modulator (available as an extra costing approximately £20) and Shugart-style disc interface have all gone to be replaced by disc interface (for 3½ inch drive) one Atari joy stick port Econet socket RS 232 composite video and RGB Also the printer port has been changed so you ll have to buy a new one if you re upgrading from the standard BBC

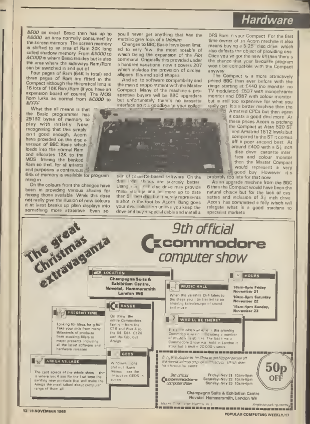
The keyboard has a somewhat cheapish feel to it and is arranged in two sections the main one containing the usual ten red function keys the other being a numeric keypad The keyboard unit is fairly light an indication of how many of the frills have been removed or transferred to the plinth

If you leave the disc supplied in the drive on powering up the machine it becomes apparent that Acorn have made a half hearted attempt to get away from the programmer type user to the sort of person who doesn t care what s going on underneath the bonnet with the provision of desk-top-like front end Just how half hearted this effort is can be gauged by the fact that it s not in Rom it s written in Basic there s no mouse provided and compared to the Macintosh or Gem on the ST it s something of a joke Unfortunately the only way to get to the View wordprocessor (provided in Rom) is via the front end software It is in fact quicker to type commands in to access the disc than to use the stagger down menus

The BBC Master Compact

Besides *View* the other software supplied includes a couple of games *ABC* (a novice s word processor) *Timpaint* Logo and a number of utilities *Timpaint* is naturally a graphics package which provides some useful facilities namely fills cut and paste and colour shading The trouble is that it is also written in Basic and is capable of drawing only very crude designs The sort of designs in fact that drive you to go and buy a real piece of graphics software

Dispensing with the superficialities and getting down to the nitty gritty the two weak points of the original BBC were lack of memory and lack of colour Taking the memory problem first this has now to a reasonable extent been cured The Compact comes with 128K memory the organisation of which is quite flexible On power up the operating system (MOS) claims the memory up to



&E00 as usual. Basic then has up to *&8000* an area normally consumed by the screen memory. The screen memory is shifted to an area of Ram 20K long called shadow memory. From *&8000* to *&C000* is where Basic resides but is also the area where the sideways Ram/Rom can be switched in and out of.

Four pages of Ram (64K in total) and three pages of Rom are fitted in the Compact although the theoretical limit is 16 lots of 16K Ram/Rom (if you have an expansion board of course). The MOS Rom lurks as normal from *&C000* to *&FFFF*.

What this all means is that the Basic programmer has 29182 bytes of memory to play with initially. Now recognising that this simply isn't good enough, Acorn have provided on the disc a version of BBC Basic which loads into the normal Ram and allocates 12K to the MOS freeing the banked Ram so that, for all intents and purposes, a continuous 64k of memory is available for programming in.

On the colours front the changes have been in providing various shades for mixing those available. While this does not really give the illusion of new colours it at least breaks up plain displays into something more attractive. Even so you'll never get anything that has the metallic grey look of a *Uridium*.

Changes to BBC Basic have been limited to very few, the most notable of which being the expansion of the *Plot* command. Originally this provided under a hundred variations, now it covers 207 which includes the provision of circles, ellipses, fills and solid shapes.

And so to software compatibility and the main disappointment with the Master Compact. Many of the machine's prospective buyers will be BBC upgraders but unfortunately there's no cassette interface so it's goodbye to your collection of cassette based software. On the disc [illegible] things are scarcely better. Using [illegible] inch disc drive may provide mass storage and be more up to date than 5[illegible] inch discs but it surely represents a shot in the foot by Acorn. Bang goes your disc collection unless you keep the drive and buy a special cable and install a DFS Rom in your Compact. For the first time owner of an Acorn machine it also means buying a 5.25" disc drive, which also defeats the object of providing one. Once you've got the new kit then there's the chance that your favourite program won't be compatible with the Compact anyway.

The Compact is a more attractively priced BBC than ever before with the range starting at £440 (no monitor, no TV modulator), £537 with monochrome monitor and £687 with colour monitor, but is still too expensive for what you really get. It's a better machine than the Amstrad CPCs but then again it costs a good deal more. At these prices Acorn is pitching the Compact at Atari 520 ST and Amstrad 1512 levels but compared to the ST it comes off a poor second best. At around £400 with a 5¼ inch disc drive, cassette interface and colour monitor then the Master Compact would represent a very good buy. However, it's probably too late for that now.

As an upgrade machine from the BBC B then the Compact would have been the natural choice but for the lack of cassettes and inclusion of 3½ inch drive. Acorn has committed a folly which will relegate what is a good machine to specialist markets.

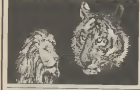
Classy black and white art

Clares Micro Supplies *Artroom* package is now available for the Acorn Master Compact which is reviewed on page 16 of this issue and is the first of its packages to be written specifically for that machine

The first point to make is that *Artroom* operates in black and white only This is because says Clares it is intended to be dumped to paper only However in the light of potential competition (Wigmore House s *The Artist* for the BBC for instance) this could be seen as a drawback

The program can be controlled via the keyboard or a mouse Needless to say keyboard operation is slower but since there is no mouse supplied with the Acorn Compact you need to buy one as an extra if you wish to use it

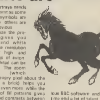
All drawing operations are accessed through an icon screen separate from the canvas What exactly each icon portrays needs to be learnt as some of the symbols are obscure others are quite obvious

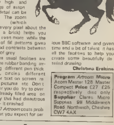


Because the program gives you black and white only the resolution is very high and drawings of astonishing detail can be created The zoom option (which makes every pixel about the size of a brick) helps you refine it even more while the variety of fill patterns gives you good contrasts between shades of grey

All the usual facilities are there the rubber banding airbrushing different pen thicknesses, circles different fonts for text on screen reversing pictures etc Don t whatever you do try to over fill an already filled area on my copy this had disastrous results – It crashed

At £27 *Artroom* costs probably what you expect for serious BBC software and given time and a bit of talent it has all the facilities to help you create some beautifully detailed drawing





Christina Erskine

Program *Artroom* **Micro** Acorn Master 128 Master Compact **Price** £27 £25 respectively disc only **Supplier** Clares Micro Supplies 98 Middlewich Road Northwich, Cheshire CW7 4AX

Get writing – get Popular

Popular Computing Weekly always welcomes contributions from its readers for articles features and program listings

Whether you want to write articles see your programming masterpieces in print pass on some words of wisdom or simply let off steam, there s space in the magazine for you

Ideas for **feature articles** or completed articles should be sent to Christina Erskine All aspects of home computing are considered but we cannot feasibly accept anything longer than 2 000 words so brief is best It s worth checking by phone or letter first that your article will be suitable Payment is normally £25 per published page

Technical editor Duncan Evans looks after the **program listings** and articles on programming We rely on you for our Programming section so earn yourself a place in the *Popular* Hall of Fame (and £25 for each page we print) by having your program published Even if it s not 100s of K of pure machine code but a short snappy routine there may well be a place for it in **Bytes and Pieces** (£10 a shot)

Articles on any aspect of programming are also welcome – with short listings included if relevant

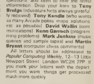
Got something you feel needs saying loud and clear? Your opinions on any aspect of the computer industry are welcomed so why not write in to the **Ziggurat** section? No more than 600 words please If published we ll pay you £15

So maybe it s not the money you re after but you d just like to have some say in the magazine

For shorter comments general observations or queries there is of course the **Letters page** with the tempting offer of a year s supply of *Popular* binders for the Star Letter each week

For more specific points our team of columnists are always willing to answer questions and keen to hear the latest information Drop your lines to **Tony Bridge** (adventure hints always gratefully received) **Tony Kendle** (who wants as many Arcade pokes maps solutions etc as possible) **David Wallin** (communications) **Kenn Garroch** (programming problems) **Mark Jenkins** (music queries and sample tapes) and **Martin Bryant** (computer chess comments)

All letters should be addressed to *Popular Computing Weekly*, 12–13 Little Newport Street London WC2H 7PP If you mark your letters with the department you want things get processed much more quickly





Left the adventurous Tony Bridge
Right the active Tony Kendle

A masterful music collection

The Musicsoft Collection is just that – a varied selection of music software covering education, performance and programming. None of the individual routines measure up to specialised packages such as Island Logic's *Advance Music System* which centres on compositional techniques, but collectively this suite of programs has a lot to offer.

The main menu offers six loading options (*Intervals*, *Keyboards*, *Musictools 1 & 2*, *Pieman* and *The Synth*) which we'll look at in order. *Intervals* is at once the most sophisticated and the least useful of the suite – it's an educational routine designed for a large class and records scores from a musical interval identification test.

Pairs of notes are sounded, together or separately, and the user has to enter his guess as to the interval between them in semitones. A table of scores (in hex for display simplicity) is set up and can be stored as a single file, and the tests become progressively more complex, introducing more and more intervals and variations in speed.

Intervals is a pretty effective educational tool, but most of us will be interested in more creative applications. *Keyboards* offers this, turning the BBC's panel into a three note polyphonic organ or a monophonic synth with envelope select options and an amazing pitch bend operated from the < > keys, or a single finger chord organ arranged across the whole keyboard or a small part of it. You can list and edit mono sounds, and editing these can create some pretty wild synthesizer effects. *Keyboards* isn't very educational since it doesn't show which notes are being sounded or anything useful like that. *Pieman* is even less educational, being a set of seven variations on the Simon game with various levels of difficulty. It teaches more about eye-to hand coordination than about music, despite the fact that it's based on pitches and coloured squares.

The two *Musictools* programs deal with simple performance and note recognition. Part one plays a series of five notes, flashing them up on a stave and a keyboard display, each series being based on a chord sequence. It's a sort of auto melody composer, while the second part is a simple recorder which plays back your keyboard performance and allows you to transpose it, speed it up, delete or reprogram the placing of the notes by tapping a single key. The second *Musictool* section includes *Tunetool*, a Basic routine for entering three part harmony tunes which you can list and re program yourself (you certainly won't want to hear the clever demo of *God Rest Ye Merry, Gentlemen* too many times). There's also *Cleftool* which draws clef key and bar length symbols in any size on the screen, and *Envtool* which is similar to the envelope editing function of the 3-note organ section.

On to the last section, *The Synth*, which in fact could more happily have been called The Sequencer. It allows you to record three channels plus a noise channel, play back patterns up to 2 500 notes long, time correct performances with a single key, Tidy patterns so that each voice has notes falling on the same beat, and so on. One voice is recorded at a time so you can carefully build up quite complex pieces, and you can repeat large sections of your composition as desired and store the result to disc.

The on screen instructions on the whole system are very easy to follow and quite logical (almost foolproof) but the presentation isn't very exciting on most of the screens. Simple tables of values won't hold the attention for too long if the purpose is educational and won't provide too much inspiration if the purpose is creative. Graphic sound editors such as that on *The Advanced Music System* are more interesting, but then the *Musicsoft* package is much more interactive in its educational modes than AMS will ever be.

The *Musicsoft* handbook is simple but clear and overall the package provides reasonable value for money. But it does have a lot of competition in some areas, and while educators may find it uniquely useful, budding synthesists may feel that it is a little basic.

Mark Jenkins

Program *The Musicsoft Collection* **Micro** BBC B and Master 128 **Price** £19 95 **Supplier** Duckworth, The Old Piano Factory, 43 Gloucester Crescent, London NW1 7DY, 01-485 3484

Living in a model universe

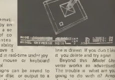
Whatever your level of interest in computers, chances are that graphics will grab your attention. And if you mention computer graphics to most people, what springs to mind are those zippy wire-frame pictures beloved of science fiction and spy movies.

Now Amstrad owners can create some impressive displays of their own with *Model Universe* from Arnor.

The package, supplied on tape or disc for Amstrad 464s and 6128s, allows you to create 3D images and then shrink, enlarge, rotate and generally push them around on screen.

As a bonus, and a bit of added value, you get a free game on the flip side called *Gatecrasher*, a test of mental agility involving barrels, cellars and moving gateways.

But back to the universe. There are a host of features including the ability to set up your image precisely and mathematically by entering a series of co ordinates, or the ability to move it around in real-time under joystick, mouse or keyboard control.



Designs can be saved to tape or disc, or output to a printer. You can also incorporate screens into your own programs, or load them into other graphics packages for further manipulation and enhancement.

My main gripe about *Model Universe* has to do with the drawing mode. This is very primitive by the standards set by current graphics programs.

For example, there are no on screen menus, no icon driven commands and very little interaction. This means that when you draw a line, you set the start point, then move the cursor to an end point, press a key and the line is drawn. If you don't like it, you delete and try again.

Beyond this, *Model Universe* works as advertised. The trouble is, what are you going to do with it? Arnor describes it as an introduction to three dimensional modelling. And it ends there.

It isn't really powerful enough for professional use, and how much long-term interest it will provide is open to question.

Still, if this is the sort of thing you like, you'll enjoy Model Universe.

Peter Worlock

Program *Model Universe* **Micro** Amstrad CPCs **Price** £15 95 tape, £19 95 disc **Supplier** Arnor Ltd, 118 Whitehorse Road, Croydon CR0 2JF


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* HEIGHTS
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NTQ comes in a 2 ROM set — one ROM containing the NTQ software and 3 fonts, the other containing a further 4 fonts. Any number of FONT EXTENSION ROMs can be added. USER FONTS created by the definer software supplied can be stored in ANY bank of sideways RAM or burnt into a ROM
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Karate's cutting edge

Paradox has come up trumps with *ST Karate*, probably the first martial arts game on the ST.

The object of the game is to achieve mystical enlightenment and to beat the hell out of anyone who gets in your way. There are a total of 18 different moves from head punches to flying kicks, all controlled by combination of joystick direction and the fire button.

The colourful and well drawn would-be Bruce Lee figures leap around and perform the various moves in a smooth manner, resulting in the action being fast and furious. Then there's the tactical element as one fighter's energy level draws closer to zilch and he must avoid confrontation while waiting for a basket to drop from the heavens. Striking one of these bouncing baskets mysteriously results in your energy level being increased. The best thing that can drop from the sky though is a little oriental mask, belting that gains you an extra life.

The backdrops to all the violence include Buddah pavilion, leak edge with a junk jetty, indoor and bedroom scenes. The first two probably shade the others but all are of a high quality graphically.

The one player game has more variety, featuring two opponents at a time and intermittent scenes of hitting bouncing or swirling column of baskets but it's most enjoyable when pitting your wits and skills against a human opponent.

It may not be particularly original but *ST Karate* is definitely one to consider when you feel like kicking someone in the head.

Popular Appeal ♦♦♦♦

Duncan Evans

Program *ST Karate* **Micro** Atari ST **Price** £24.95 **Supplier** Paradox Software Ltd, 49 Rhodes Avenue, London N22 4UR

Weaving that (not so) magical spell

It almost goes without saying that creative types do better work on their own projects than when they're working to someone else's specification.

A prime example is the Level 9 team, capable of producing some of the best adventures but who have turned out such poor stuff as *Adrian Mole* and *The Archers*.

Now in similar vein comes *The Colour of Magic* under the new Piranha label but programmed by Delta 4 — creators of the splendid *Boggit* and *Robin of Sherlock*.

The Colour of Magic is based on Terry Pratchett's book of the same name, and concerns the trials and tribulations of Rincewind the fourth-rate magician.

Rincewind lives on the Discworld and gains employment as translator to Twoflower, the first tourist in this other dimensional backwater.

Colour of Magic concerns the trials and tribulations of these two unlikely companions.

The most noticeable thing about the Discworld is that it doesn't conform to normal directions. Instead you must use the terms Hubward, Rimward, Turnwise and Widdershins. Although this is in keeping with the mood of the game, I found it intensely annoying.

The same goes for the game's vocabulary. Obviously you can't expect everyone to be up to the standard of Infocom, or Level 9, but this is much too limited.

There are a few graphics but they fully support the text-only lobby: they add nothing to the game, are irritatingly slow to be drawn, and consume memory that would have been far better employed in expanding the game's vocabulary.

All in all then, not Delta 4's finest hour, and an inauspicious debut for Piranha in the adventure field.

Spend your money on something better: there's lots of choice at the moment.

Popular Appeal ♦♦

Peter Worlock

Program *The Colour of Magic* **Micro** Commodore 64/128 **Price** £9.95 **Supplier** Piranha, 4 Little Essex Street, London WC2R 3LF

Gee-whizz technopop

BBC owners — at least as far as game playing goes — are almost a forgotten breed these days. So it's nice to report the arrival of a real cracker.

Repton 3, as you will guess from the title (even if you're not familiar with *Repton* and *Repton 2*) is not totally original but the third in a successful series.

The sound effects are not outstanding, the graphics are a touch higher than the standard set by the Vic 20, and the animation leaves rather a lot to be desired.

So now we're clear on what it's not, let's establish what it is.

It's brilliant, and it's fiendishly addictive.

There are 34 screens to the game, each of them a series of logical puzzles. A typical one might have a very narrow entrance. To get a diamond you dislodge a boulder which blocks the entrance so you can't get out. So first you move the boulder, get the diamond, then discover that moving the boulder prevents you from getting that other diamond. You get the picture.

By way of further aggravation, you're up against the clock — but buried away on some of the screens are capsules which give you extra time.

On the earlier levels you can call up a map screen, and once you've finished the game (somewhere around Easter 1989) you can use a screen designer to torture yourself even further.

It's available on cassette or disc: there's a version for the Electron and a $3\frac{1}{2}$ inch disc format for the new Master Compact.

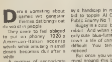
Just goes to show there's more to computer games than gee-whiz graphics and a technopop soundtrack.

Popular Appeal ♦♦♦♦

Peter Worlock

Program *Repton 3* **Micro** BBC Micros **Price** £9.95 cassette, £11.95 disc, £14.95 $3\frac{1}{2}$in disc **Supplier** Superior Software, Regent House, Skinner Lane, Leeds LS7 1AX.

Time warp to Chicago circa 1920



Dere s someting about games wit gengster themes dat brings out da wo st in people

They seem to feel obliged to put on phoney 1920 s American-Italian accents which while amusing in small doses becomes dull after a while

A number of second-rate games have been produced along these lines The latest attempt is *Bugsy* written by St Brides and distributed by CRL

So all praise to St Brides who went da whole hog wit dis one and pulled it off Bugsy is amusing in large doses

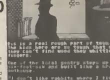
It s all down to the off beat humour starting with Bugsy s handicap in making his bid to topple Al Capone as Public Enemy No 1

Bugsy is a cute blue-furred rabbit And when you re the only cute blue-furred rabbit in town a life of crime is a bit difficult You tend to get noticed

But once you ve got your mind around this bizarre beginning everything else follows with inexorable illogic

For example how does such an eye-catching rabbit pull off a robbery? Easy – he wears a mask

Bugsy is an illustrated adventure (*Quill'd* and it must be said *Quill'd* superbly) in which you must take this penniless but cute rabbit from apprentice shoplifter to numero uno in the Chicago underworld



Of course it s a game of questionable morality Along the road to success Bugsy will have to indulge in any number of crimes including – but not limited to – mugging petty theft armed robbery and murder Terrific fun though

Some of the puzzles are tough In the first instance be aggressive in the right circumstances this cuddly bunny can turn into a lean mean fighting machine Later you ll have to be subtle ruthless cunning corrupt But cute always cute

Bugsy is an 18-carrot success Top o the world Ma

Popular Appeal ◆◆◆◆

Peter Worlock

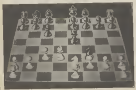
Program *Bugsy* **Micro** Commodore 64 **Price** £7 95 **Supplier** CRL 9 Kings Yard Carpenter s Road, London E15

Taking chess to a higher dimension

After being refined and released for a string of different computers Psion s *Chess* program has been incarnated on the Atari ST in what is probably its finest form

On loading a three dimensional view of the board is displayed in four colours on the ST s medium resolution screen (640 × 200 pixels) The pieces are clearly drawn and undoubtably represent the best graphics of any version yet produced but initially it is easy to overlook something vital when you have four or more of them in a vertical line After a few games though familiarity with the designs prevents such mistakes occurring again

At the top of the screen discretely hidden until the cursor is moved there are the various drop down menus which give access to all the options and facilities provided by the program



If you need instructions then there s the *Help* option the display can be switched from 3D to 2D and back again with just the click of the mouse, Hint and Analysis options are there to help you and if you ve made a calamitous mistake then there s always the *Takeback* facility, or if things have gone downhill too far you can swap sides and play with your opponent s pieces

Speaking of opponents you can play against the computer against a friend or set it up so that the ST plays itself

Naturally all the legal moves in chess including En Passant are allowed while illegal moves cannot be made

All these frills would be of superficial value if the program played poorly Thankfully it doesn t With 28 levels of play ranging from Novice to extremely patient waiting for the computer to move you should find your match somewhere along the line (unless your name s Kasparov of course) Even at the default setting of six seconds *Psion Chess* plays a pretty mean game which just goes to show the power and speed of the ST have been put to good use

Finally one of the most interesting features of all is the provision of 50 classic chess games on the disc covering the last 150 years (and including a couple of Karpov v Kasparov matches) for you to examine and even play from any particular point An overview of these matches is given in the manual by International Master William Hartston

If you have an ST and you want to play chess then don t consider *Psion Chess* buy it!

Popular Appeal ◆◆◆◆

Duncan Evans

Program *Chess* **Micro** Atari ST **Price** £24 95 **Supplier** Psion Psion House, Harcourt Street London W1H 1DT


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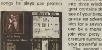
Stirring tales

Down these mean streets a half-orc must walk

The streets belong to Skara Brae one of the toughest towns ever to grace a fantasy universe Here fame and fortune can be yours because Skara Brae is a town gripped by terror and the streets are paved with corpses

This is the setting for *The Bard's Tale* the hot new role-playing game by Electronic Arts out of the Ariolasoft stable

The bard is one of the great original inventions in RPGs A skilled warrior he has turned to the magic of music and the songs he plays can protect your band of adventurers soothe your savage enemies or even bring light to dark places



The plot is familiar stuff Skara Brae is in the grip of the evil mage Mangar the town s soldiers are gone and bands of wrong-doers are roaming the streets

Your mission is to persuade Mangar of the error of his ways ie, kill him But before you can do that you ll have to build up a force capable of doing the business

What makes *The Bard's Tale* so outstanding is the presentation

The screen display is split into three windows The largest contains the vital statistics of your band which comprises six adventurers plus a slot for a seventh The latter can be a monster who may join your party or a magical creature summoned by one of your powerful sorcerers

The second window is a full-colour graphical view of your surroundings – the streets the insides of buildings inns temples, and (natch!) the dungeons You ll also get pictures of your characters here, and enemy monsters – many of them animated



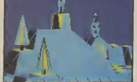
The third window contains a scrolling textual description of scenes and events In combat you get a blow-by-blow commentary here

So if you ve stomped on every monster in *Wizardry,* tramped over every square inch of the *Ultima* series get a copy of *The Bard's Tale*

PS a half-orc and 'half an orc' are not at all the same thing The latter is not much use to anybody unless it s got gold in its pockets

Popular Appeal ♦♦♦♦♦
Peter Worlock

Program *The Bard's Tale* **Micro** Commodore 64/128 **Price** £14 95 **Supplier** Ariolasoft Long Acre, London WC2.



Stand tall – stand guard

Originality is a word often bandied but little adhered to in the wacky world of entertainment software in the Year of our Lord 1986

Consequently when something this original turns up it tends to knock your socks off What we are talking about here is *Sentinel* the latest Firebird release on BBC and Commodore 64 – with others to follow maybe

You start off in Landscape Zero finding yourself stationery within a *Marble Madness* type landscape with the ability to look left/right and up/down

Looking round you will see an eerie vista of escarpments and trees with a figure placed on top of a pinnacle That figure is your enemy – the sentinel

The sentinel scans the landscape very much like a light house only its gaze is deadly in that it drains energy from your robot (that s you incidentally) You start off with ten units of energy as indicated on the upper left hand portion of the display

It s a question of kill or be killed which is where the clever bit comes in Using your reserves of energy you can create things Trees costing one unit of energy to block the gaze of the sentinel(s) boulders costing two to increase your height and new robots at a cost of three Why should you want to increase your height? Because being at a higher level than another object on the landscape allows you to absorb its energy And that includes sentinels (all this creating and absorbing is done by using an on screen cursor)

You move around by creating another robot then transferring your 'being' into it You can now absorb the energy from your old body and get on with the business of surviving

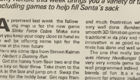
If this sounds difficult with one sentinel, well, as you go along you tend to get more say six all placed somewhere different scanning a different part of the landscape This is genuinely hair raising in that you ll find yourself moving around frantically in an attempt to get out of a scan hyperspacing like mad (unfortunately this costs another three units) and generally getting your hair messed up And here s the punch line How many levels to *Sentinel?* 100? 1000? 5000 even? No 10 000 separate landscapes — and you start at zero

Each landscape has a unique secret entry code – and in case you re thinking of trying to hack into the thing Mr Crammond has doubly encrypted these codes and in his own words, unravelling the system would take an awfully long time

Popular Appeal ♦♦♦♦♦
John Cook

Program *Sentinel* **Micro** Strategy **Price** £9 95 on tape £14 95 on disc **Supplier** Firebird 74 New Oxford Street, London WC1

The cream of the Christmas crop



Tony Kendle this week brings you a vanety of tips – including games to help fill Santa's sack

As promised last week the following map is for the new game *Strike Force Cobra* Make sure that you keep your copy close to hand as we will be offering some tips for the game in the near future

Here are some tips from Steven Kalmin for *Herbert s Dummy Run*

Get the honey from floor two and the box key on floor three Take them to the Jack in the box and jump on it Swap the honey for the teddy bear Get rope from the exit and go to space Invaders to get through the door Jump at rope in next room Go get the pop gun and cork to get past the soldiers

Fetch flag from the roof and the duck from the swimming pool on floor one Take duck and flag to the beach to get the pebbles Get the catapault from the exit and it will become loaded Get the broken torch and bulb which will now become a working torch

Take the loaded catapault and the torch to the dark room and shoot the ducks to get caps To get past the hand get the glove from the breakout room

Can anyone help with what to do with the red whale, camera, A brick Pete s book radio 10 pence caps bomb and coat of arms? Also does anyone know where the hammer is in the Commodore version of *Pyjamarama* and how to save a game on the C64 version of *Stanon?*

After having made a successful entry into the software market with its budget range showing that quality and low prices need not be mutually exclusive Firebird went into the doldrums for the middle of this year It was living on conversions of old hits such as *Elite* and new misses such as *The Comet Game*

When I saw that the Silver range had been relaunched with such exciting, and apparently immortal, oldies as *Heli chopper* and *The Wild Bunch* still to the fore things looked bleaker still I m now happy to admit I was wrong – the newer budget games are so much fun and such excellent value that they have put the Silver range back into the top quality class

The games to look for are without a doubt the extremely popular C64 *Warhawk* and the loose arcade conversions *Space Firebirds* (Amstrad) and *Thrust* (a wide range of machines) The latter is a vector graphic game of exceeding skill and much frustration which has been very well done *Rombscare* is a very smooth 3D filmation game which whilst traditional in its play and not particularly innovative is as good as anything Ultimate has done and well worth the price

The one that really bowled me over was *Harvey Headbanger* (Amstrad) – a very very simple game to play but very well programmed indeed addictive and barrels of fun It s a safe Christmas present for anyone including yourself

Other brilliant games that are around at the moment include two that have despite all the odds come up with new and very enjoyable variations on the 3D filmation theme Quicksilva s *Glider Rider* has been out a while on the Spectrum but the new CPC version is one of the few that really make the most of the machine – high resolution good use of colour, continuous sound and the same very clever game behind it all The key first step for anyone who is stuck in this game is to drive into the pylons so you can temporarily disable the laser towers – any more tips than that will be welcome

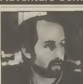
Ocean s best since *Batman* is undoubtedly *Great Escape* – a fascinating game which portrays life inside a German POW camp where you have to sift a myriad clues and red herrings to find the way out Loads of rooms loads of independent action from the other characters and an absorbing scenario It s even entertaining to sit back and see the daily life of the camp carry on without worrying about escaping

Charts

Top Twenty

1	(1)	Infiltrator	Mindscape/US Gold
2	(2)	1942	Elite
3	(4)	Trivial Pursuit	Domark
4	(3)	Fist II	Melbourne House
5	(5)	Paperboy	Elite
6	(7)	Computer Hits Vol 3	Beau Jolly
7	(11)	Ghosts and Goblins	Elite
8	(12)	Lightforce	Faster Than Light
9	(6)	Ninja Master	Firebird
10	(14)	The Great Escape	Ocean
11	(10)	Thrust	Firebird
12	(—)	Trap Door	Piranha
13	(12)	Dragon s Lair	Software Projects
14	(18)	180	Mastertronic
15	(—)	Pub Games	Alligata
16	(16)	Warhawk	Firebird
17	(—)	Uridium	Hewson
18	(8)	Druid	Firebird
19	(—)	Kane	Mastertronic
20	(—)	Green Beret	Imagine

All figures compiled by Gallup/Microscope



Intercepting the commands

This week, Tony Bridge saves you hours of frustration with Interceptor tips, plus other news from the adventurous world

There are rumours making the rounds of a Super-Quill in gestation known as *The Quillustrator*. It will, I'm told, combine the graphic and text capabilities in one package and include lots of other new features. However, there is nothing concrete yet, and I'm sure that I'll be able to bring you more details as they become available.

To get away from Quill'd adventures, however, and to visit once more the hallowed realms of the original mainframe foray into the nether worlds, let's have a look at a game called (with refreshing and stunning originality) *Adventure* from (more originality, and why has nobody thought of it before?) Adventure Software. What these people lack in thinking up titles (it is, admittedly, a provisional title) they more than make up for in the scenario of their adventure. It's very heartening to a reviewer in these days of the ubiquitous *Quill* (though I'm sure you'll all agree that it is a great utility) to come across a *non*-Quill'd game, and a more favourable outlook is naturally taken.

The author, Nigel Brooks, tells me that he originally chose the well known scenario in order to test his adventure writing system, but felt that his implementation of the well known theme was good enough to launch as a fully fledged game. I must say that the game is very well presented – text-only (with very atmospheric descriptions throughout) it retains curiously many features of a Quill'd adventure (such as the R command and so on), but there is much more besides.

Although the puzzles remain largely the same, Nigel has taken a leaf out of Level 9's book and added more locations this time to the beginning; the effect this has is to make the whole of the subterranean world more believable. The player doesn't just happen to stumble across the lamp, keys and other provisions lying around the hut, but has to work hard to obtain them. Objects can be carried in the pocket, or taken out for use – again, more believable. As much thought has gone into the rest of the story – apart from an attractive-looking and restful character set, all sorts of silly inputs seem to be catered for, including most of the usual swear words (of course, the Elf only has this on hearsay) and the persistent user of naughty words gets well and truly put in place! Asking for help is a little strange – you must first say the magic word, which will then suffice on its own.

All pictures from Interceptor's Aftershock

As I said, the puzzles remain largely the same, though the well-known Bird and rapid transit (from and to the Y2 room and the hut and so on) are handled in a rather different way than usual, and all the better for it – the snake, for example, eats the bird and then simply wanders off, replete. I have to say that it's a more elegant solution.

I hope we can see more stories written with this system, although the parser (or *parsar*, as Adventure Software insists on saying, which is the only lapse I have noticed in the spelling, another big plus point) is not the equal of other more complex examples; it is perfectly adequate. *Get* and *Drop All* are possible, as are *Ram Save* and *Load*, though these are only possible while carrying a certain object.

I don't know how much Adventure Software wants for *Adventure*, but write to them at 21 Ditchling Rise, Brighton, Sussex BN1 4BQ and give them a nudge.

It seems like years since Interceptor released their last adventure, but in fact *Warlord* is only some months old. Like the other programs, the new *Aftershock* is written for the Spectrum and all the Amstrads (including the PCW) by David Banner and illustrated by Terry Greer, and the pictures are for me the most interesting part of the story.

As usual they are brilliant, but they have the added dimension, in the present case, of animation. Thus a hand waves weakly from beneath a pile of rubble where its owner lies (almost) buried; a plume of smoke rises from the ruins.

But I'm getting ahead of the story, which concerns Armageddon – or rather, the imminent threat of nuclear disaster. A large earthquake has laid to waste the city in which the adventure takes place, caused by the local nuclear testing range; the reactor is now in danger of a Chernobyl-like meltdown. You may think that you are sitting at home idly tapping at the keyboard of your computer, but you are actually the designer of the reactor and the only person in the world who can prevent a major catastrophe, so why are you just sitting there, idiot?

The story starts in your remarkably tidy office (no animation in this first picture) from which you must somehow escape to effect repairs to the reactor There are just half a dozen locations at the start and as far as I know only one way out This is where the basic flaw of David Banner s adventure system first shows itself the way out through a panel in the ceiling of the lift is pretty obvious even to me and the method of making the escape is also obvious A nice movable chair is sitting there in the first room so take it to the lift and – well not quite hey presto! First of all you can t *Get* anything instead you must *Take*

Okay maybe David Banner is one of those writers who refuses to even look at other stories for fear of contamination and that is fair enough – but look at the method to actually escape from the lift and the commands required

First of all having dropped the chair you must then *Climb Onto Chair* You can t *Stand* on chair or *Go Up* or *Go Chair* or *Use Chair* or any other Thesaurus-inspired alternatives Next you must *Examine Ceiling* for the panel to be revealed then *Remove Panel*

Of course you must get out of the lift through the panel but the *only* command recognised by the program is *Climb Out Of Lift* Again, you may say Well, isn t that obvious? and it is but I believe that we have all travelled a fair distance down the path since adventures first arrived and would expect some credible alternatives to be accepted

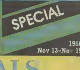
After this first round of frustration the story opens out quite a bit with lots of locations and objects with which to be puzzled – but you ll still need to keep in mind the strange workings of the Bannermind Almost all the puzzles are conducted in the same convoluted fashion as the lift problem – later on, you must oil a sluicegate mechanism But you can t use the words that any normal person would use especially in a tight situation you must *Lubricate Mechanism* Is there absolutely *no* room for a couple of smiles?

I magine that the main problem facing the author here was the sheer amount of memory required for the graphics and Interceptor seems justifiably proud of these at the recent Amstrad show a rolling demo of the pictures was being displayed on their stand but unfortunately none of the text I think *that* is of some importance too! I d actually prefer an adventure to be spilt into twenty parts if it means that we can have both pretty pictures and a reasonably gripping puzzle

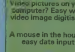
Atmosphere comes largely from the scenario although the descriptions are much more evocative than the old You are in a of yore and these are supported by those wonderful pictures These are very skilfully drawn (you won t see better draughtsmanship outside a CAD lab) and beautifully composed with Greer using the best of comic book techniques

At £3–£4, *Aftershock* might well have proven irresistible, for there is a good story here well illustrated and quite atmospheric in the race to cool down the reactor with some interesting puzzles – but with Infocom packages available at almost the same price Interceptor must learn that players deserve more for their money nowadays than Try another command even if we are being stupid


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PERIPHERALS





Buying [illegible] is, by [illegible] choosing the [illegible] very company [illegible] twenty printing [illegible] th r assorted [illegible]

The aim of this [illegible] what to go out [illegible] you some idea of the [illegible] the pitfalls to avoid in [illegible] system

Apart from looking at [illegible] like printers, monitors and [illegible], we're also considering some of [illegible] recent luxury items mice, which can contribute so much to user-friendly operating systems, and the latest in video digitisers

Next week we move on to the little matter of choosing a computer ◀

Pixel perfect pics

PATRICIA SAVAGE ON THE BLACK BOXES LINKING YOUR HOME MICRO TO THE OUTPUT OF YOUR VIDEO SYSTEM

After the home computer the biggest market for consumer electronics in the last few years has probably been the video recorder The UK has the biggest percentage of households owning video recorders in Europe and market penetration is particularly high among home computer owners

Inevitably the idea of linking the computer and the video machine has developed into an interesting market Practically any micro can now be used to capture video signals from a recorder or a video camera, and manipulate them by adding artificial colours or incorporating them into other programs The applications for illustrating games desktop publishing data analysis and [illegible] fields are obvious

The latest video digitiser product is for the Amstrad CPC series Produced by [illegible] Morrison best known in the Dragon computer market, it s a reasonably priced [illegible] with a decent specification

Like all similar products the Morrison [illegible] works by converting the signal intensity levels of the video image into a form the computer can understand, and present as a screen image The final quality of course depends very much on the resolution of the computer

The Morrison digitiser can sample a picture in [illegible]th of a second This means that moving images can be frozen efficiently The alternative for slower digitisers is to use the pause function on the videotape, which often results in wobble or snow Because the Morrison digitiser has a high scan rate it presents a small continuous monitor image of around 2x2 When you have found the image you want to digitise it takes around 1[illegible] seconds to capture the picture and present it as a full [illegible] image

Resolution is [illegible] pixels operating in mode two The results which can be stored on tape or disc can be [illegible] to a suitable printer giving [illegible] effect where pixels [illegible] there are [illegible]

The digitiser [illegible] and comes [illegible] with software on tape or disc and [illegible] connect [illegible]

Product Amstrad Video Digitiser **Micro** Amstrad CPC **Price** £59 95 **Supplier** J Morrison [illegible] Gardens Tingley, West Yorks WF[illegible] [illegible]R

There are at least two digitisers available for the Sinclair Spectrum one from the Dutch company Dataskip the other a home-grown product from Sunset

The Dataskip digitiser VideoFace, produces a 256×192 pixel display at four intensity levels It can scan a picture every 0 27 seconds giving a continuous

display, the six latest screens of which can be saved to produce animation effects

Images can be saved to tape, microdrive, or Beta disc. The software is menu driven but doesn't offer many facilities for manipulating the monochrome image.

Product. Videoface **Micro:** Spectrum **Price:** £69 **Supplier:** DataSkip, L Willemsteeg 10, 2801 WC Gouda, Holland, or Romantic Robot, 77 Dyne Road, London NW6 7DR, 01-625 9463

The alternative is the Sunset digitiser, which scans only still pictures, but which has sophisticated manipulation software.

You can alter the contrast, scroll around the image (which is bigger than the Spectrum's screen), save it to tape, microdrive or disc, and load it into various art software packages for further manipulation.

Because the 256×192×4 bit resolution of the image is actually higher than the Spectrum can display, it's also possible to port the picture onto higher spec machines to enhance the picture. The software is menu driven, and the hardware is contained in a Cheetah style box. The main drawback is the price.

Product. Sunset Digitiser **Micro.** Spectrum **Price:** £126.50 **Supplier:** Sunset, 3 New Road, Farnham, Surrey GU10 1DF

We looked at the Haba digitiser for the Atari ST in the Vol 5 No 44, so just a brief summary here. The Haba unit is manufactured by Print Technik, and consists of the main unit, external power supply, connecting lead to the ST's parallel port, manual and software. Despite the advanced graphics handling of the ST, the Haba digitiser seems to have many limitations. It can only handle still images, taking around ten seconds to complete the scan.

There are four pull-down menus, which allow you to set the size, number of scan lines, zoom, invert, flip and print out. Lastly, and perhaps most interestingly, any of the ST's 512 colours can be assigned to the 16 shading levels of the image to create spectacular colour pictures.

Images can be saved as screen strings or in NeoChrome/Doodle format, for later manipulation using the art packages' facilities. Again, the major drawback is the price. At £300, the Haba device doesn't seem to offer any value for money. If the software were designed for more professional applications, it might be a different matter; but for something largely useful only for entertainment, or for creating illustrations for games, the price is unfavourable.

Product: Haba Video Digitiser **Micro.** Atari 520 ST **Price:** £299.95 **Supplier:** Haba Systems Ltd, Pier Road, North Feltham Trading Estate, Feltham, Middlesex TW14 0TT



The Print Technik video Digitiser for the Commodore 64 is similar in many ways to the Haba ST version. It creates images at full 64 resolution, then allows you to scroll around the image, and use the function keys to assign any of the 64's sixteen colours to the four grey scale levels of the picture. The Print Technik 64 digitiser comes complete with a package of applications programs on disc. These allow you to use the device as a simple security system, able to detect changes in a scanned picture received from a video camera. Again, for best results the scanned image should be still.

Product. Print Technik 64 Digitiser **Micro:** CBM 64 **Price:** £69 **Supplier:** Supersoft, 01 861 1166

One of the most sophisticated digitisers for the BBC comes from Watford Electronics. It uses the full graphics capability of the BBC in modes 0, 1 or 2, and images can be compressed, stored on disc, and hard copied using an Epson type printer. In mode 2 there are eight levels of grey available.

Each scan takes 1-8 seconds, and the black and white levels can be manually adjusted, set to automatic, or reversed. The manual includes information on driving the unit from Basic and using the images created together with text files and other programs, and the system software is provided on ROM.

Product: Watford BBC Digitiser **Micro:** BBC B **Price:** £95 **Supplier:** Watford Electronics, Jessa House, 250 Lower High Street, Watford 0923 37774



The mousetrap

THE MOST USER-FRIENDLY SOFTWARE OFTEN USES WINDOWS, ICONS AND A MOUSE BUT HOW DO YOU CHOOSE THE BEST MOUSE FOR YOUR MICRO? CHRIS JENKINS SNIFFS AROUND

Since the introduction of the Apple Macintosh the mouse controller has been the touchstone of user friendly, state-of the-art operating systems Mechanically, the mouse is quite simple it consists of a rolling ball which is moved over the desktop, mechanical or optical sensors to detect the movement and transmit it to the computer and buttons to select options from on screen menus

Of course the mouse is only as good as the software it drives usually, this takes the form of a series of pull-down menus presenting all the available options pictographs called icons to select different functions, and windows which open up to allow sub-routines to be called A complete system of this kind, of course, goes by the acronym WIMP Window, icon, menu (or mouse) program

Most home computers now have mouse systems specially designed for them Unfortunately each system must have software tailored specially for it, apart from the upmarket Atari ST and Commodore Amiga, there is no standardisation So, when considering a mouse system, you must also take into account the software available for it.

The best established mouse for the Spectrum is the AMX Produced by AMS, it is very well supported by a range of sophisticated software products from AMS themselves, and from an increasing number of third party software houses

The AMX mouse is an unremarkable blockish design, with three decent sized micro switches and a non slip rubber ball It comes with a 1½ metre cable, connecting it via a 20 way plug to an interface which plugs into the Spectrum's user port. The interface also includes a Centronics printer port, but you can also use an RS 232 printer if you have the Sinclair Interface 1

The three mouse buttons are usually configured as Execute Move and Cancel

Provided with the mouse is a package of art programs and applications routines, AMX Art has the usual windows and icons with drawing tools including pencils brushes, boxes patterns magnify,



circle spraycan and roller Together with the multi font text facility and the Scroll option which gives access to a 416 × 304 pixel drawing area the mouse can be used to produce very detailed drawings and technical diagrams A gridlock facility makes it easier to produce precise lines with the mouse

Also included is the Colour Palette program to colour your AMX Art pictures, and AMX Control, a sophisticated user interface routine to enable you to create your own mouse driven programs using 28 new Basic commands An icon designer, and two demos a calculator and a sliding block puzzle, complete the package

The AMX Mouse can also be used with Rainbird's Art Studio, Softek's Artist 2 and AMS's Pagemaker layout package however, this last is only available for the BBC and Amstrad PCW models ◀

Mouse AMX Price: £69 95 Supplier: AMS Freepost, Warrington WA4 1BR Tel 0925 413501

The major rival to the AMS mouse is the Kempston model Designed by the well known joystick interface manufacturers, this mouse looks nicer than the AMX with a sleeker body and two recessed switches The Kempston Mouse comes bundled with a special version of Rainbird Art Studio which is certainly one of the best Spectrum graphics programs The Kempston mouse's cable terminates in a D plug which goes into the interface supplied

The Art Studio really comes into its own when used with a mouse — like so many other programs If you have a microdrive and Interface One you can also use the Kempston mouse with Softek's The Writer word processor and the forthcoming Artist 2 Although the instructions provided with the Kempston mouse give nowhere near as much detail as those with the AMX device, it is possible to incorporate it into your own programs either in Basic or machine code. Designing icons and window routines would be another matter ◀

Mouse Kempston Price: £69 95 Supplier: Kempston 10 Oberon Court, Bedford.

The latest offering from Saga, following hot on the heels of the Compliment expansion system reviewed two weeks ago is the Star Mouse Cheaper and simpler than the Kempston and AMS devices, there are versions for the Spectrum and the QL

Bundled with the mouse, which features one large click top button, is the CAD package StarDraw You can also use the mouse with the excellent word processor The Last World Word

On the Spectrum version of the software there are nineteen drawing commands available from the master screen represented by icons on the right hand side These can be moved to the left, or removed from the screen altogether if you wish

Facilities are pretty standard pen, brush, texture, ellipse, magnify cut and paste and five font styles There's also an

Epson-type printer dump routine Although the software compatibility of the Star Mouse is pretty limited for the price it may be able to offer all you need Amstrad and CBM64 versions are on the way ◀

Mouse Star Mouse **Price:** £49 95 **Supplier** Saga, 2 Eve Road Woking, Surrey GU21 4JT Tel 04862 22977

The Commodore 64 with its high quality graphics and efficient (if not speedy) disc system, is one computer which is ideal for mouse applications One of the best mice available is sold under a number of different names by Wigmore House, as the MS-2000 part of the Cheese or Artist 64 packages, as the Neos Mouse, with Cheese and also as part of the Commodore Connoisseur s Compendium, together with the Cheese software the Commodore 64C, datasette and a bundle of games software

The MS 2000 is a little gem of engineering, with a stylish wedge shaped design, two big comfortable buttons, and a large non slip rubber coated ball It plugs into the 64 s joystick port, and can in fact be used as a joystick if you power up the computer with the mouse s right hand button held down

The Cheese software package is an introductory graphics design program with a number of powerful features line, dotted line solid and empty polygons, reflections, fill patterns, and so on It's possible to create excellent pictures very quickly and easily but there are several omissions including text entry, user defined patterns, choice of storage format and so on

For the more advanced user the Artist 64 software is ideal This exploits the capabilities of the mouse to the limit, although oddly enough it doesn t use icons or windows possibly because there are something like 250 000 different control combinations possible! Artist 64 was reviewed four weeks ago and is arguably the best graphics package for the 64 Also on the way is a desktop WIMP program featuring a calendar, diary, clock, calculator name and address directory and disc utility program at £18 50 ◀

Mouse MS 2000 **Price** £44 90 with Cheese £69 90 with Cheese and Desktop **Supplier** Wigmore House, 32 Savile Row, London W1X 1AG Tel 01 734 8826

The MS 2000's major rival is the Datex Mouse, which is very good mechanically but suffers from a complete lack of outside software support The hardware is very high quality, finished in an IBM cream colour and including three positive-action switches

The graphics software included with the package operates in Bit Map mode which severely limits your choice of colour effects but which gives a high resolution comparable to that of Rainbird's Art Studio software Also available is a software enhancement package which offers a higher degree of user control over mouse functions ◀

Mouse Datex **Price.** £49 95 **Supplier:** EEC, 14 Western Parade Great North Road, Barnet, Herts EN5 1AD

As a business-oriented machine with all the makings of a top-class WIMP system – good monitor resolution decent operating system, speedy disc drives – it s surprising that there isn't yet an established mouse package for the Amstrad PCW Two companies are working on it, predictably Kempston and AMS

The Kempston mouse will be supplied complete with an appropriate interface, and a software package called Desktop This is a GEM type environment with graphic design facilities Price is expected to be around £99 95

AMS's package is intended to be part of a complete desktop publishing system This overused phrase, better applied to higher spec systems such as the Apple Mac (which can be interfaced to a laser printer), might not be appropriate to the PCW but we eagerly await the opportunity to compare these two attempts to crack the PCW mouse market Full reviews coming as soon as possible

Mouse Kempston PCW **Price** £89 95 **Supplier:** Kempston, as above **Mouse** AMX PCW **Price** TBA **Supplier** AMS, as above ▲

The cheapest mouse for the BBC is the Megamouse again from Wigmore House It is quite different to the MS 2000, a much heavier design with three switches It s compatible with AMS's BBC mouse software, and with several packages from Wigmore Cadmouse a sophisticated 3D design package with animation facilities at £29 90, The Artist (not to be confused with other programs of the same name), a powerful ROM program at £49 90 and a utilities package which allows you to produce colour screen dumps

Also available for the Electron is the Anamouse with its own graphics program, Mousepaint ◀

Mouse: Megamouse **Price** £59 **Supplier:** Wigmore House, as above

For an alternative you are back with AMS for the BBC version of their AMX mouse This is among the best supported home micro mice with a 16K ROM offering windows icons and pull down menus in a variety of colour modes the Super Art program on ROM plus tape or disc, and icon designer, the Pagemaker layout system the 3D Zicon CAD package and AMX databases interactive examination programs, desktop packages and mono and colour art programs The basic package is £69 while the software add-ons are around £20 each ◀

Mouse. BBC AMX **Price** £69 **Supplier** AMS, as above

With the advantage of a 68000-based machine with relatively large memory, any mouse for the QL would be expected to perform well The Eidersoft mouse is similar in appearance to the AMX, with three buttons and a cable leading to an interface box which plugs into the computer s ROM port

The software provided with the mouse, ICE, is a sophisticated WIMP desktop system, contained in ROM From ICE you can load ARTICE, a powerful graphics program ICICLE, a mouse driven icon and window editor and, with extra memory, any of the Psion programs using the CHOICE multi tasking program Also available from Eidersoft, as part of a continuing program of mouse software development for the QL, is the Supreme Mouse similar mechanically to Wigmore s BBC Megamouse, but costing £59 95 ◀

Mouse Eidersoft **Price** £39 95 **Supplier** Eidersoft The Office, Hall Farm N Ockenden, Upminster, Essex Tel 0708 853647

Search for a Star

CHOOSING A PRINTER CAN BE A BAFFLING PROBLEM. JOHN LETTICE LOOKS AT STAR'S RANGE AND SUGGESTS A FEW ANSWERS

After the relatively simple decision of what computer to buy, trying to choose a printer to go with it comes as something of a shock. Unless you have opted for an Amstrad PCW, which comes supplied with its own printer, there is very little guidance available on what to look for. There are, for instance, several types of interface: Centronics, RS 232 and the machine specific Commodore Serial standards for a start. Then you have to decide whether you want a dot matrix machine for speed at the sacrifice of quality or a daisywheel for the opposite. Do you need a tractor feed printer to use continuous stationery, or a friction feed for single sheets? And is there anything to be gained from using a thermal printer?

Features

One solution to the problem is to get hold of a printer company's catalogues and work through its list of models, trying to select the one which does everything you need, but which has no redundant features for which you need to pay. There are certainly bargains to be found. For instance, the star NL-10 is by no means the company's top of the range printer, but a look at the features might lead you to believe otherwise. It's at the pricey end of the consumer market at £327, but if you're looking for a flexible machine which will produce good quality output it's well worth thinking about.

It's sturdy and nicely designed, with a built in tractor (rather than the flimsy clip-on variety), and tilting the paper gives you the choice of sheet feeding. The printer itself has no standard interface, but instead uses modular cartridges that simply plug into the back. Parallel, IBM parallel, Commodore and Apple II are all £45 each (one is included in the printer price quoted above) while serial is £91. This kind of approach is handy from the manufacturers point of view, and also gives you a certain flexibility if you want to change your micro.



The NL-10's interchangeable interface cartridges

As usual it's possible to vary the printer's modes by sending escape codes to it (depending on the interface used) but many of the features are accessible from the front panel. This gives you bold, three width settings (the printer is technically 80 column, but allows you to switch between 80, 90 and 136 column printing) and NLQ (near letter quality) printing. It's also possible to set the printer to print in italics, and to vary the margins from the front panel (handy if you find your printout is cramped up against one margin).

Print speed is a healthy 120 cps in draft mode, and 30 cps in NLQ, both perfectly adequate for most standard tasks, and overall the NL-10 is well worth considering if you do a reasonable amount of printing and want good quality allied with flexibility.

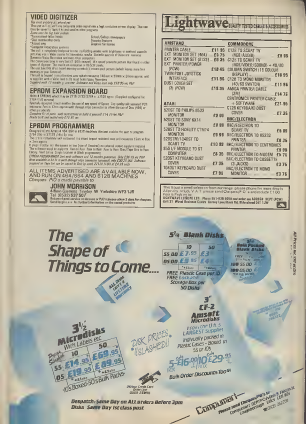
The STX-80 is a different kettle of fish altogether. It's a small 80 column thermal printer, with sophisticated features by the standard of thermals, but although the print quality is reasonable it's really geared to listings rather than correspondence.

It runs at 80 cps and features standard and enlarged modes (the latter 40 columns) plus a block graphic and a bit image mode. Line pitch can be varied, as can form length, and it has a full compliment of dip switches. Essentially it's a low cost printer that happens to use thermal technology rather than dot matrix.

But there's the rub. At £93 the price isn't really low enough to make it a bargain compared to the cheaper dot matrix machines, which can be had for around £100, so its main selling point is in terms of noise — if you want something dead quiet then thermal's the right choice.

Daisy, Daisy

The more extrovert user might head for a daisywheel printer, although if you're looking to refight the Battle of the Somme Star's PowerType probably won't fit the bill. It still makes the annoying thumpa thumpa noise that daisies are famous for, but the casing has been so well soundproofed that even in full flight it's



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really almost bearable.

It features dual parallel and serial interfaces, three column widths and a reasonably fast 18 cps printout speed Faced with the impossibility of doing cute bold/NLQ type things on the front panel Star has indulged in a series of lamps instead There's a power lamp to tell you when it's switched on, a busy lamp to tell you when it s working, a ribbon end lamp, a word processing mode lamp and a software mode lamp
Manhattan skyline

The word processing and software modes are intended to make the printer easier to use, the former being intended for commercial word processing programs, while the latter is more suited to programming

Output

As with all daisies the Power Type can't be used for graphics, but there is still a quality difference between dot matrix and daisywheel output and if you're set on high quality output, for business letters and the like then at £270 it's excellent value Star also has a wide range of printwheels for it so you'll at least have the facility to vary your text

At £266 the Citizen LSP 10 is marginally cheaper than its closest rival here, the Star NL-10 It has a great deal in common with the Star having built in IBM and Epson compatibility, 120 cps draft mode and 25 cps in NLQ Like the Star its interface is removable allowing the machine to be used by a number of machines including Commodores and Ataris.

Modes

The control panel looks traditional, but also allows you to switch modes between pica, NLQ italic, emphasised, reduced and beep disabled (beats dip switches) by pressing online while holding form feed down This sort of system is sort of easy in that you don t have to mess around with escape codes, but you never really know where you are with them It would be better if there was some kind of mode indicator on the front NLQ is actually accessed by a slightly different method, which makes it more or less confusing depending on your point of view

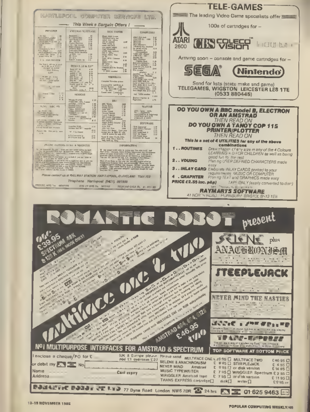
Still, even without better guidance on the modes the printer is good quality, and manages to cram a fair number of features in for the price Another point worth taking into account is its size it s by no means the smallest of printers, but it is relatively compact, which could be important if you're short of space

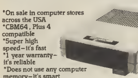
Star s NL-10 in close up

Deciding what facilities you need before you buy is a great time saver but remember that whether you want a printer for listings, word processing, graphic or some specialised application like label printing, it's a pretty important investment and you should choose carefully ◀



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In the days of the first microcomputers, you had no choice but to buy a dedicated monitor since none of the machines came with a TV modulator

Later just about all micros were designed to work with TVs and some, like the Spectrum were not designed to work with a monitor at all

Things are so confused now that you can buy little black boxes that will turn computer monitors like the Amstrad and Commodore units into TV sets

Dedicated

The reasons for buying a dedicated monitor are many depending on what you want to do with your computer anyway In all cases it saves upsetting the family by hijacking the TV set during *EastEnders*

Most monitors are capable of displaying 80 column text (provided that the computer has the capability) which is essential for word processing

Monochrome monitors are cheaper than colour, so if word-processing is your main activity, a high resolution black & white, or green screen monitor might be your best buy

But most users want colour, and the main issue here is whether to go for RGB or composite video Most of us don t have a choice since most machines will work with only one kind or the other

Composite video is cheaper but the quality of the colour display is not as high as RGB (Red, Green Blue, the three separate colour signals)

Resolution

The main thing to look for when buying a monitor (apart from cost) is screen resolution - the number of dots the monitor can display If you have a micro with high resolution graphics, such as the Atari ST you ll want a monitor that can display the graphics to their full effect On the other hand, if you have a Spectrum or a Commodore 64, you shouldn t overspend since you'll be buying a facility that you ll never use

In terms of quality one other thing you might look for is the size of the individual dots on screen, usually given as the number of dots per millimetre The higher this number the better For example, the Macintosh does not have a particularly high screen resolution The reason Mac graphics look incredibly sharp is because the monitor displays very small dots

Finally, if you're a games player, make sure that the monitor you re thinking of buying has a built in loudspeaker Most monochrome monitors, and quite a lot of colour models don t. The models listed in the accompanying table are all colour, and all include a loudspeaker ◀

Model	Price (Ex VAT)	Screen Size	Screen Resolution	Input
Fidelity CM14	170	14	Med	Comp/RGB
Sanyo CD3195	190	14	Low	Comp
Philips CM8500	210	14	Low	Comp
Taxan Vision PAL	230	14	Med	Comp
Thomson CM36632 VPR	230	14	Low	Comp
Philips CM8501	240	14	Low	RGB
Microvitec CUB452	240	14	Med	Comp/RGB
Hantarex CT900D	250	14	Low	Comp/RGB
Thomson CM36512 VI	260	14	Med	Comp/RGB
Philips CM8524	280	14	Low	Comp/RGB
Microvitec CUB653	300	14	High	Comp/RGB
Philips CM8533	310	14	High	Comp/RGB
Thomson CM31481 VI	350	12	Med	Comp/RGB
Microvitec CUB505	380	20	Med	Comp/RGB
Thomson CM36382 SI	380	14	High	RGB

Communications data

DAVID WALLIN GIVES SOME POINTERS ON BUYING COMMUNICATIONS HARDWARE TO MATCH YOUR NEEDS

After a Joystick a MODEM is now probably the top peripheral people consider purchasing for their computer This is mainly due to recent price drops A modem can now be bought for under £60 Printers disc drives and other such peripherals (even a mouse) all have starting costs over £50 and usually in excess of £150 Modems can cost well over £180 (the PACE Series 4 modem that I use costs £479 and isn't even the top of the range model), but if you want to get into computer communications cheaply, and believe me it's worth getting into, then it can be done for under £60 quite easily

Firstly, I'll explain what the modem is It's the box that goes between a computer and the phone line and enables one computer to talk to another (provided both use appropriate modems and software)

The two main things to look out for on a modem are the range of speeds (the more the better) and the presence of autodial/autoanswer

Specific

Modems, to use over the telephone lines fall into 3 categories, machine specific (such as the Commodore modem and VTX 5000 for the Spectrum), general use modems (such as the Voyager 11) and intelligent modems (such as the Tm512 and the Series 4)

The machine specific modem is one designed for use with just one computer or a range of models of the same computer (eg 16K Spectrum 48K Spectrum, Spectrum + and Spectrum 128)

1) For the Commodore 64 there's the Commodore Modem, currently available free from Compunet with every one year subscription (new data software costs £11 99) and the Miracle Multi Modem 64 which costs £99

2) For the BBC there is the Demon (Walkbury Consultants) which costs about £80, the Magic Modem from DataStar which costs £99 and the Watford Electronics Le Modem which costs £59 Personally, I would advise the Le Modem for a first time buyer as it is very easy to use

3) For the Spectrum there's the Modem House VTX5000 which costs £30 This modem lacks features and the software is Viewdata (Prestel Gnome at Home etc) only but it is still a good modem and my personal choice for a Spectrum owner's first modem, indeed, it was mine

4) For the Amstrad PCWs there's the KDS Communicator 8256 which costs £153 and the Amstrad modem from PACE which costs around the £100 mark



Watford's BBC Le Modem offers ease of use for beginners

In general these are the cheapest modems and often ones costing only £70 or £80 have features that, on the other two types of modem, would cost over £120 or £130

Next, on to the general modems Usually these will work with most computers, but often require special software to do so These are modems such as the Voyagers 7 and 11 from Modem House (£80 and £100 respectively) and the WS2000 from Miracle Technology which costs £109 This class of modem is probably the most common and the modems generally range from £76 to £150 in price, depending on features

Intelligent

Personally, I don't like these modems much I prefer the machine specific or intelligent ones This is purely a personal preference, and these modems work as well as the other two types

Lastly, the top of the range modem is the intelligent type These start at about £160 and go into the low £1000s They work with ANY computer (provided it has an RS232/Serial port) and require no special software Many commercial software packages with communications facilities will drive what is called a Hayes modem Hayes is a standard command set, other command sets include V25 and DaCom

This is my favourite type of modem mainly because they are all similar and easy to use Unfortunately they cost a lot About the cheapest is the WS4000 from Miracle Technology This is about the best modem that you can get either as your first one or as a replacement to present one for under £150 It offers 300/300 and 1200/75 speeds, autodial and answer and is upgradeable

Approval

All that remains is to sum up how you go about choosing and buying a modem If it's to be your first then a machine specific is usually the easiest to use If you can afford it, an intelligent modem such as the WS4000 is a good choice Look out for as many features as you can get for as low a price as you can find Buying second hand is a good idea, if you can get a suitable modem Lastly remember that it is illegal to use an unapproved modem on the phone lines! ◀


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Fonts

R Groom

Fonts will work on both the BBC and Electron computers and provides two italic, two bent letter and one upside down font. Also three letter heights and a character expander are available.

To obtain a font you should use the following statement

Proc FONT(x,y,t$,n)

Where x and y are the text co ordinates and n is the number of the font. The fonts are as follows

1 – upside down
2 – left slanted italics
3 – right slanted italics
4 – bent left
5 – bent right
6 – double height
7 – quadruple height
8 – octuple height

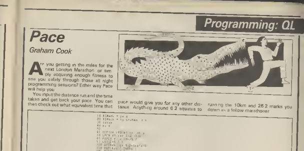
As the rest of the listing is published next week the instructions for the character expander will be given then. If you want a copy of the program then send a tape plus £3 to R Groom, 106 Ingles, Welwyn Garden City, Herts AL8 7HG.



```
10REM ***************
20REM *FONTS & THINGS*
30REM ******III******
40REM **By R.D.GROOM**
50REM ***************
60MODE5:VDU23,1,0;0;0;0;
70DIMarray%(9,9)
80PROC_ASSEMBLE
90PROC_FONT(2,6,"FONTS & THINGS",6)
100PROC_FONT(0,9,"By R.D.GROOM  1986",
7)
110PROC_FONT(3,14,"UPSIDE DOWN",1)
120PROC_FONT(3,16,"SLANTED LEFT",2)
130PROC_FONT(3,18,"SLANTED RIGHT",3)
140PROC_FONT(3,20,"BENT LEFT",4)
150PROC_FONT(3,22,"BENT RIGHT",5)
160PROC_FONT(2,29,"DOUBLE HEIGHT",6)
170S%=-20
180FORX%=100TO1240STEP120
190PROC_EXPAND(X%,250,67,1,100,100,S%)
200S%=S%+4
210NEXT
220END
230DEFPROC_ASSEMBLE
240C%=&FFEE
250DIMP%400
260[OPT2
270.call
280LDA#10
290LDX#&70
300LDY#0
310JSR&FFF1
320RTS
330.define
340LDA#23:JSRC%
350LDA#255:JSRC%
360LDA&71:JSRC%
370LDA&72:JSRC%
380LDA&73:JSRC%
390LDA&74:JSRC%
400LDA&75:JSRC%
410LDA&76:JSRC%
420LDA&77:JSRC%
430LDA&78:JSRC%
440RTS
450\TURNS CHARACTOR UPSIDEDOWN
460.upside
470JSRcall
480LDY#8
490LDA#23:JSRC%
500LDA#255:JSRC%
510.loop
520LDA&70,Y
530JSRC%
540DEY
550BNEloop
560LDA#255:JSRC%
570RTS
580\SLANTS CHARACTOR LEFT
590.left
600JSRcall
610ASL&71
620ASL&72
630ASL&73
640LSR&76
650LSR&77
660LSR&78
670JSRdefine
680LDA#255:JSRC%
690RTS
700\SLANT CHARACTOR RIGHT
710.right
720JSRcall
730LSR&71
740LSR&72
750LSR&73
760ASL&76
770ASL&77
780ASL&78
790JSRdefine
800LDA#255:JSRC%
810RTS
820\BEND CHARACTOR LEFT
830.bendl
840JSRcall
850LSR&71
860LSR&72
870LSR&77
880LSR&78
890JSRdefine
900LDA#255:JSRC%
910RTS
920\BEND CHARACTOR RIGHT
930.bendr
940JSRcall
950ASL&71
960ASL&72
970ASL&77
980ASL&78
990JSRdefine
1000LDA#255:JSRC%
1010RTS
1020\GIVES DOUBLE HEIGHT
1030.double
1040JSRcall
1050LDA#23:JSRC%
1060LDA#255:JSRC%
1070LDA&71:JSRC%:JSRC%
1080LDA&72:JSRC%:JSRC%
1090LDA&73:JSRC%:JSRC%
1100LDA&74:JSRC%:JSRC%
1110LDA#255:JSRC%
1120LDA#23:JSRC%
1130LDA#8:JSRC%
1140LDA#...:JSRC%
1150LDA#255:JSRC%
1160LDA&75:JSRC%:JSRC%
1170LDA&76:JSRC%:JSRC%
1180LDA&77:JSRC%:JSRC%
1190LDA&78:JSRC%:JSRC%
1200LDA#255:JSRC%
1210RTS
1220\GIVES QUADRUPLE HEIGHT
1230.quad
```

Pace

Graham Cook



Are you getting in the miles for the next London Marathon or simply acquiring enough fitness to see you safely through those all night programming sessions? Either way Pace will help you

You input the distance run and the time taken and get back your pace You can then check out what equivalent time that pace would give you for any other distance Anything around 6 2 equates to running the 10km and 26 2 marks you down as a fellow marathoner

```
10 REMark * pace
20 REMark * by Graham Cook
30 setup
40 pace
50
[illegible]
```


U.F.O.

Steven Pattullo

Huge alien space stations are closing in on your home planet of Blob You must fly your space ship over the space stations and destroy the reactor at the end with your one photon megablaster missile to stop the Earthling invasion

However defending suicide pilots will attempt to ram you and you are not allowed to leave the decks of the station which is unfortunate because on later levels it is strangely shaped and you won t know the configuration of the next screen until you appear on it

This very long listing with superb Uridium style graphics will be published over four weeks so if you don t want to type it in send £2 (or £1 30 plus cassette) to Steven Pattullo 34 Birchfield Road Widnes Cheshire WA8 7SU

Listing 1

[illegible]

Listing 2

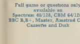
```
1 POKE 53248+22,24 POKE 53282,10 POKE 53285,
1 POKE 53280,5 POKE 53281 5
2 POKE 53248+22 24
10 PRINT "J"
20 POKE 56333 127 POKE 1,51
30 X=PEEK(53248
40 POKE 1,55 POKE 56333 129
50 POKE 14336 X
100 FOR A=1 TO 26
110 FOR N=0 TO 7
120 READ X
130 POKE (14336+N+8*A),X
140 NEXT N A
200 FOR A=45 TO 90
```

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DOMARK

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In the past eighteen months Palace Software has gone from strength to strength as a developer and publisher of computer games. Our games Cauldron and Cauldron II have been major hits around the world and our latest release – Antiriad – is now being released to fantastic critical acclaim.

Behind the scenes we are busily working on a series of exciting new projects for release during 1987 and we are looking for new people to join the Palace Team.

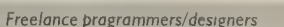
Full-time programmers

We are expanding our in-house team and are looking for up to three programmers to join us. The work involves working alongside some very talented games designers – artists and musicians – on development machines.

We are particularly looking for people who have at least some experience in Z80, 6502 (or similar) machine code. You will need to be reasonably experienced in the subject but not necessarily at professional level.

The jobs are based at our Central London offices. Salary will be based on previous experience. In addition a royalty is paid on sales of games. Applicants should be at least 19 years of age.

Freelance programmers/designers



We are very interested in publishing games written and programmed by freelance design and programming teams.

You will probably be working within the business with involvement in games already published by other companies and now want to further establish your name and reputation. You will need to have the experience to see projects through from initial idea to finished programme.

If you feel you are a talented and experienced programmer/designer – working as an individual or a team – with exciting and original ideas, we would like to talk to you.



In either case phone Pete Stone at Palace Software on 01-278 0751 and tell him all about yourself.

```
210 FOR N=0 TO 7
220 READ X
230 POKE (14336+N+8*A),X
240 NEXT N,A
300 FOR A=31 TO 32
310 FOR N=0 TO 7
320 READ X
330 POKE (14336+N+8*A),X
340 NEXT N,A
400 FOR A=48 TO 57
410 FOR N=0 TO 7
420 READ X
430 POKE (14336+N+8*A),X
440 NEXT N,A
1000 DATA 62,64,66,66,158,130,130,0
1002 DATA 254,130,132,136,132,130,156,0
1004 DATA 248,4,128,128,128,132,184,0
1006 DATA 254,128,130,130,130,132,152,0
1008 DATA 252,2,128,184,128,134,184,0
1010 DATA 30,32,64,92,128,128,126,0
1012 DATA 248,4,170,128,158,130,140,0
1014 DATA 130,130,130,158,130,130,66,0
1014 DATA 8,0,16,32,32,64,64,0
1016 DATA 254,2,2,2,66,34,18,0
1018 DATA 130,132,184,176,136,132,130,0
1020 DATA 128,128,128,128,128,140,176,0
1022 DATA 164,152,146,146,146,146,146,0
1024 DATA 176,140,130,130,130,130,130,0
1026 DATA 40,68,130,130,130,68,40,0
1028 DATA 184,132,130,132,184,128,128,0
1030 DATA 40,68,130,130,146,76,44,0
1032 DATA 184,132,130,156,144,136,132,0
1034 DATA 124,64,48,12,2,4,248,0
1036 DATA 254,2,16,16,16,16,16,0
1038 DATA 130,130,130,130,130,130,140,0
1040 DATA 130,130,132,172,136,8,240,0
1042 DATA 130,146,146,146,146,146,186,0
1044 DATA 194,36,40,16,32,72,132,0
1046 DATA 130,130,38,26,2,2,2,0
1048 DATA 250,2,12,48,192,0,254,0
2000 DATA 170,170,165,165,165,165,165,165
2002 DATA 170,170,85,85,85,85,85,85
2004 DATA 165,165,165,165,165,165,165,165
2006 DATA 171,175,95,95,95,95,95,95
2008 DATA 95,95,95,95,95,95,95,95
2010 DATA 95,95,95,95,95,95,255,255
2012 DATA 85,85,85,95,85,85,255,255
2014 DATA 165,165,165,165,165,165,191,255
2016 DATA 10,10,10,10,165,165,165,165
2018 DATA 85,85,85,85,85,85,85,85
2020 DATA 165,165,165,165,10,10,10,10
2022 DATA 240,240,240,240,95,95,95,95
2024 DATA 170,171,151,151,151,151,191,255
2026 DATA 0,0,0,0,0,0,0,0
2028 DATA 170,170,175,175,175,175,149,85
2030 DATA 165,165,245,245,245,245,85,85
2032 DATA 255,255,245,245,245,245,245,245
2034 DATA 255,255,85,85,85,85,85,85
2036 DATA 254,250,90,90,90,90,90,90
2038 DATA 90,90,90,90,90,90,90,90
2040 DATA 90,90,90,90,90,90,170,170
2042 DATA 85,95,95,85,85,85,170,170
2044 DATA 245,245,245,245,245,245,234,170
2046 DATA 245,245,245,245,245,245,245,245
2048 DATA 0,0,0,0,0,0,170,170
2050 DATA 95,85,0,0,0,0,0,0
3000 DATA 95,95,95,95,240,240,240,240
3002 DATA 0,0,0,0,0,0,0,0
4000 DATA 254,254,198,198,198,254,254,0
4002 DATA 24,24,24,24,24,24,24,0
4004 DATA 254,254,6,254,192,254,254,0
4006 DATA 254,254,14,254,14,254,254,0
4008 DATA 192,216,216,254,254,24,24,0
4010 DATA 254,254,192,254,6,254,254,0
4011 DATA 292,192,192,254,198,198,254,0
4012 DATA 254,254,7,7,7,7,7,0
4014 DATA 254,254,198,254,198,254,254,0
4016 DATA 254,254,198,254,254,6,6,0
```


Card Index

Iain Tatch

Continuing on from last week the main menu is now displayed. Most of the options are self explanatory. However an option six bewares of enlarging a file beyond the capacity of the disc. To calculate how many records you can have use this formula

$$\text{No of records} = \frac{\text{disc capacity} * 1000}{\text{total record length}}$$

Where disc capacity is 170 for Drive A and 700 for Drive B and total record length is the sum of each individual field length.

Always quit the program by using option 8, *Finish* otherwise information might be lost.

To use the program it is necessary to load CP/M and then Basic before entering the listing.

Should you not want to type it all in send a formatted disc and £2.50 to Iain Tatch, 4 Victoria Road, Chingford, London E4 6BZ.

```
4140 PUT 1 rec2%
4150 PRINT "Record cop      RETURN
 "
4160 f$=CHR$(13) GOSUB 10000
4170 GOTO 1000
5000 REM * SEARCH *
5010 PRINT cls$ PRINT PRINT bu$ "SEARCH
FILE" eu$
5020 PRINT PRINT "Enter search criteria
for each field "
5030 PRINT
5040 FOR j=1 TO nof LSET f$(j) =""
5050 PRINT t$(j) " (" f$(j)," "
5060 NEXT j
5070 FOR j=1 TO nof
5080 PRINT FNa$(LEN(t$(j)) +   j+5)
5090 l=flen(j) GOSUB 10100
5100 s$(j)=s$
5110 NEXT j
5115 PRINT
5120 PRINT PRINT "Search " inv$ "from" n
iv$ " which file (1-" nor$
5130 INPUT "1  )" sf
5135 IF sf<>INT(sf) OR sf<1 OR sf>nor TH
EN PRINT bel$ GOTO 1000
5140 PRINT PRINT "Search " inv$ "to" niv
$ " which file (" RIGHT$(STR$(sf) LEN(ST
R$(sf))-1) " " nor$
5150 INPUT ")   ",se
5160 IF se<>INT(se) OR se<s1 OR se>nor T
HEN PRINT bel$ GOTO 1000
5161 PRINT PRINT PRINT "Is this all corr
ect (Y/N) ?"
5162 f$="YyNn" GOSUB 10000
5163 IF i>2 THEN PRINT bel$ GOTO 1000
5165 PRINT cls$  ff$
5170 FOR i=sf TO se
5180 PRINT "Searching file between recor
ds " i "and" se CHR$(1)
5200 GET 1 1
5210 ff=0 FOR j=1 TO nof
5220 IF s$(j)="" THEN GOTO 5240
5230 IF INSTR(f$(j) s$(j))<>0 THEN ff=1
5240 NEXT j
5250 IF ff=0 THEN GOTO 5340
5260 PRINT PRINT PRINT "Match found in r
ecord  i
5270 PRINT bel$
5280 FOR j=1 TO nof
5290 PRINT t$(j),  "" f$(j) "
5300 NEXT j
5310 PRINT PRINT "Press " inv$ "SPACE BA
R" niv$ " to continue searching "
5320 f$=" " GOSUB 10000
5330 PRINT  c s$
5340 NEXT i
5350 PRINT PRINT PRINT bel$ "Search comp
lete  press " inv$ "RETURN" niv$
5360 f$=CHR$(13) GOSUB 10000
5365 PRINT on$
5370 
6000      T *
60   PRINT cls$
6020 PRINT cu$, LI      1 E",eu$
6030 PRINT PRINT "  nd   s   output to sc
reen or printer  or cance  (  /P (   )"
6040 f$="sSpPcC" GOSUB 10000
6050 IF i>4 THEN PRINT bel$ GOTO 1000
6060 IF i>2 THEN sp=1 PRINT "PRINTER" EL
SE sp=0 PRINT "SCREEN"
6070 PRINT PRINT PRINT  Start list at wh
ich record (1-" nor$
6080 INPUT ")  )" sl
6090 IF sl<>INT(sl) OR sl<1 OR sl>nor TH
EN PRINT bel$ GOTO 1000
6100 PRINT "End list at which record ("
6110 PRINT RIGHT$(STR$(sl) LEN(STR$(sl))
-1) "-" nor$
6120 INPUT ")  )",el
6130 IF el<>INT(el) OR el<sl OR el>nor T
HEN PRINT bel$ GOTO 1000
6140 PRINT PRINT PRINT "Output records b
etween" sl "and" el "to the "
6150 IF sp=1 THEN PRINT "printer " ELSE
PRINT "screen "
6160 PRINT "Correct (Y/N) ?"
6170 f$="YyNn" GOSUB 10000
6180 IF i>2 THEN PRINT bel$ GOTO 1000
6190 PRINT PRINT "Commencing list "
6195 PRINT IF sp=1 THEN LPRINT "Listing
of file " f$ " between records" sl "and
" el
6196 IF sp=0 THEN PRINT "Listing of file
 " f$ " between records  sl "and" el
6200 PRINT PRINT PRINT
6210 FOR i=sl TO el
6220 GET 1,i
6230 IF sp=1 THEN GOSUB 6900 GOTO 6300
6240 PRINT PRINT "Record" i
6250 FOR j=1 TO nof
6260 PRINT t$(j) "  " f$(j) ">"
6270 NEXT j
6280 PRINT PRINT "Press " inv$ "SPACE BA
R" niv$
6290 f$=" " GOSUB 10000
6300 NEXT i
6310 PRINT PRINT PRINT
6320 PRINT bel$ "Record list complete -
press " inv$ "RETURN" niv$
6330 f$=CHR$(13) GOSUB 10000
6340 GOTO 1000
6900 LPRINT LPRINT "Record" i
6910 FOR j=1 TO nof
6920 LPRINT t$(j) " /" f$(j) " "
6930 NEXT j
6940 LPRINT
6950 RETURN
7000 REM * INCREASE RECORD NUMBERS *
7010 PRINT cls$
7020 PRINT PRINT bu$,"INCREASE MAXIMUM N
UMBER OF RECORDS",eu$
7030 PRINT PRINT
7040 PRINT "The file at present will all
ow for up to" nor,"records "
7050 PRINT PRINT "Do you wish to increas
e this (Y/N) ?"
7060 f$="YyNn" GOSUB 10000
7070 IF i>2 THEN PRINT bel$ GOTO 1000
7080 PRINT PRINT INPUT "Enter new record
 maximum )" nnor
7085 IF nnor<=nor OR nor<>INT(nnor  THEN
PRINT bel$ GOTO 1000
7090 PRINT PRINT "The program will now a
ttempt to increase the maximum number of
 records in the file "
7100 PRINT "but increasing this past the
 memory capacity of the disc drive could
 cause a 'fatal "
7110 PRINT "error   Do you still wish to
 increase record maximum? (Y/N) )"
7120 f$="YyNn" GOSUB 10000
7130 IF i>2 THEN PRINT bel$ GOTO 1000
7140 PRINT PRINT PRINT "Adding records
please wait "
7150 FOR i=1 TO nof
7160 LSET f$(i)=" "
7170 NEXT i
7180 FOR i=nor+1 TO nnor
7190 PUT 1 i
7200 PRINT i CHR$(1")
7210 NEXT i
7220 CLOSE 1 KILL fi$+" var" OPEN "," 
fi$+" var"
7230 IF pw THEN WRITE #1 pw pw$ ELSE WRI
TE #1,0
7240 WRITE #1 nof nnor
7250 FOR i=1 TO nof
7260 WRITE #1 t$(i),flen(i)
7270 NEXT i
7280 CLOSE 1 totlen=0 FOR l=1 TO nof tot
len=totlen+flen(l) NEXT l
7285 OPEN "r  1 fi$+" dta" totlen
7287 FIELD 1 flen(1) AS f$(1) flen(2) AS
 f$(2) flen(3) AS f$(3) flen(4) AS f$(4
 flen(5) AS f$(5) flen(6) AS f$(6) flen(
7) AS f$(7) flen(8) AS f$(8) flen(9) AS
f$(9) flen(10) AS f$(10)
7290 nor=nnor
7300 PRINT PRINT PRINT "File extension c
omplete - press " inv$ "RETURN",niv$
7310 f$=CHR$(13) GOSUB 10000
7320 GOTO 1000
7999 END
8000 REM * FINISH *
8010 PRINT cls$ bel$ PRINT
8020 PRINT "Do you really want to finish
 the program (Y/N) ?"
8030 f$="YyNn" GOSUB 10000
8040 IF i>2 THEN GOTO 1000
8050 PRINT
```

```
9060 CLOSE 1
9070 PRINT cls$ esc$ CHR$(121)
9080 PRINT PRINT PRINT PRINT "Finished
[illegible] may now re[illegible]e the disc " PRINT
[illegible] END
[illegible] REM * DISPLAY A RECORD *
9010 PRINT PRINT
9020 PRINT bu$ "DISPLAY A RECORD" eu$ PR
INT
[illegible] PRINT "Wh[illegible] record [illegible] " nor$ "[illegible]
[illegible]
[illegible] INPUT "" d rec IF d rec 1 OR d rec
nor OR [illegible] rec<>INT(d rec) THEN PRINT CHR$
7 GOTO [illegible]
[illegible] PRINT PRINT "Record number" [illegible] rec P
RINT
9060 GET [illegible]
9070 FOR i= [illegible]
9080 PRINT [illegible]
9090 NEXT [illegible]
[illegible] PRINT [illegible] in$ [illegible] E BAR [illegible]
9[illegible] i$ [illegible] GOSUB [illegible] GOTO [illegible]
9999 END
10000 REM * GET ONE KEY PRESS *
10010 i$=""
10020 WHILE i$=""
10030 i$=INKEY$
10040 WEND
[illegible] GOTO [illegible]
[illegible] REM * GET STRING OF [illegible]
[illegible] i$=INKEY$ IF [illegible] THEN
[illegible] =ASC(i$)
[illegible] IF i=[illegible] AND s$=[illegible]
[illegible] THEN PRINT [illegible]
[illegible] LEFT$(s$ LEN s$ [illegible]
[illegible] AND LEN s$ [illegible]
i$ s$=s$ i$
[illegible] THEN [illegible]
[illegible]
```


Championship Bowls

Colin Speed

Here's the final part of bowls listing. Type in the hex loader, run it and correct any errors in the data. When the code is error free the program will save it to tape.

To run the game the following line should be entered – *Clear 59999: Load "" Code: Randomize Usr 60000*

```
1020 DATA "[illegible]" 3[illegible]
1030 DATA "[illegible]" 2[illegible]
1040 DATA "[illegible]" 2[illegible]
1050 DATA "[illegible]" 2[illegible]
1060 DATA "[illegible]",2[illegible]
1070 DATA "[illegible]" 4[illegible]
1080 DATA "[illegible]" 3[illegible]
1090 DATA "[illegible]" 3[illegible]
1100 DATA "[illegible]" 3[illegible]
1110 DATA "[illegible]" 2[illegible]
1120 DATA "[illegible]",3[illegible]
1130 DATA "[illegible]",4[illegible]
1140 DATA "[illegible]" 3[illegible]
1150 DATA "[illegible]" 4[illegible]
1160 DATA "[illegible]" 4412
1170 DATA "[illegible]" [illegible]
1180 DATA "[illegible]" [illegible]
1190 DATA "[illegible]",[illegible]
1200 DATA "[illegible]",4244
1210 DATA "[illegible]",2767
1220 DATA "[illegible]" [illegible]
1230 DATA "[illegible]" 3946
1240 DATA "[illegible]" 3541
1250 DATA "[illegible]",2150
1260 DATA "[illegible]" 2565
1270 DATA "[illegible]" 3[illegible]
1280 DATA "[illegible]" 2[illegible]
1290 DATA "[illegible]" 1[illegible]
1300 DATA "[illegible]" 1700
1310 DATA "[illegible]",1[illegible]
1320 DATA "[illegible]",1901
1330 DATA "[illegible]" 1700
1340 DATA "[illegible]" 1[illegible]
1350 DATA "[illegible]" 3212
1360 DATA "[illegible]" 3[illegible]
1370 DATA "[illegible]" 2[illegible]
1380 DATA "[illegible]" 3[illegible]
1390 DATA "[illegible]" 3[illegible]
1400 DATA "[illegible]",3[illegible]
1410 DATA "[illegible]" 1941
1420 DATA "[illegible]" 2[illegible]
1430 DATA "[illegible]" 3418
1440 DATA "[illegible]" 3[illegible]
1450 DATA "[illegible]" 1770
1460 DATA "[illegible]" 4305
1470 DATA "[illegible]" 4[illegible]
1480 DATA "[illegible]" 5[illegible]
1490 DATA "[illegible]",2[illegible]
1500 DATA "[illegible]" 2640
1510 DATA "[illegible]",2511
1520 DATA "[illegible]" 2244
1530 DATA "[illegible]",2[illegible]
1540 DATA "[illegible]",2012
1550 DATA "[illegible]" 3050
1560 DATA "[illegible]" [illegible]
1570 DATA "[illegible]" 3[illegible]
1580 DATA "[illegible]" 3772
1590 DATA "[illegible]",3677
1600 DATA "[illegible]" 4711
1610 DATA "[illegible]" [illegible]
1620 DATA "[illegible]" [illegible]
1630 DATA "[illegible]" 2[illegible]
1640 DATA "[illegible]" 1[illegible]
1650 DATA "[illegible]",2[illegible]
```

Invert

D Nash

This program for the Spectrum will invert the entire screen, that is change every *Ink* pixel to *Paper* and vice versa. The program also includes a routine to copy the whole screen (not just the top 22 lines) to any printer using the Rom copy routine. If this is not required leave out line 210

```
  40 LET address=65000
  50 LET a=0
  60 READ b
  70 IF b=999 THEN  GO TO 110
  80 POKE a+address,b
  90 LET a=a+1
 100 GO TO 60
 110 PRINT "All data correct  Use RANDOM
IZE USR 65000 to invert screen "
 120 IF a=24 THEN  STOP
 130 PRINT "Use RANDOMIZE USR 65024 for
24  line copy "
 140 DATA 229,197,213 33 0,64 6,192.197,
6 32.126,47 119 35,16.250 193.16.244,209
,193 225,201
 210 DATA 243,6 192.33,0 64.195 178 14
 220 DATA 999
```

Code Send

M C Ogier

This is a procedure for the QL designed to make the sending of codes to the printer far easier

Channel 4 is assumed to be opened to the printer before the procedure is called. It can be used in various ways as follows

Set 27 69 or *Set esc E* or *Set ESC 69* will all send codes to set the printer to produce emphasised print

```
100 REMark M. CHARLIE OGIER - GUERNSEY 1986
110 DEFine PROCedure SET(p$)
120 LOCal a$,h,y
130 h=1.y=1
140 p$=p$ & ','
150 REPeat loop
160       IF h> LEN (p$) THEN EXIT loop
170  REPeat find
180       IF p$(h)=','THEN EXIT find
190       h=h+1
200  END REPeat find
210   a$=p$(y TO h-1)
220    IF a$='ESC' DR a$='esc' THEN LET a$='27'
230    IF CODE (a$(1))>=48 AND CODE (a$(1))<=57
240      PRINT#4;CHR$(a$);
250     ELSE
260      PRIMT#4;a$,
270   END IF
280  y=h+1:h=y
290 END REPeat loop
300 END DEFine SET
```

Shaded Shapes

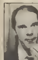
D G Nevill

These two procedures for the QL fill an area circle or rectangle with cross hatching

Shade Circle requires the programmer to specify *x* and *y* (the centre of the circle) *r* (radius) and *i* (separation of shaded lines)

Shade Box requires *x y* (position of bottom left corner of the box) *x1* and *y1* (the sizes of the sides of the box) and *i* (as above)

```
100 DEFine PROCedure Shade Circle(x y r i)
110 LOCal t,s p q z
120 t=(r^2/2)^.5
130 FOR s=x t TO x+t STEP i/2
140 p=((x-s)^2*2)^.5
150 q (r^2 p^2)^.5
160 z (q^2/2)^.5
170 LINE s+z,y+x-s+z TO s-z,y+x-s-z
180 END FOR s
190 END DEFine Shade_Circle
200 DEFine PROCedure Shade Box(x y,x1 y1 i)
210 FOR ys=y+y1 TO y-x1 STEP -i
220 x2 x:y2=ys:x3=x+x1:y3=ys+x1
230 IF ys<y THEN x2=x+y-ys:y2=y
240 IF y3>y+y1 THEN x3=x+(y+y1) ys+y3-y+,1
250 LINE x2,y2 TO x3,y3
260 END FOR ys
270 END DEFine Shade_Box
```



With Kenn Garroch

Printer problems

Francis Cheng of Stoke-on-Trent writes

Q I would be grateful if you could tell me which printer (if any) is compatible with the Commodore 128. What interface would I need to buy and how much will it cost?

A The simplest solution is to buy a Commodore printer. With this you will be able to plug it in and off you go. The MPS 801 costs about £130 and the MPS 1000 about £270 and you should be able to get one from any Commodore stockist.

The alternative is to buy a Centronics interface and any other dot matrix printer you fancy. Any will do as long as they have a Centronics interface. A Centronics interface for the C128 can be obtained from Calco Software, Lakeside House, Kingston Hill, Surrey KT2 7QT, and costs £29.95.

Graphic confusion

P S Winter, of Chatham, Kent, writes

Q I would like to ask for a little help in typing in computer programs from magazines. The problem is that I cannot make head nor tail of some of the graphics commands. Is there a book I can get which will show all of the graphics characters, as this is causing me great difficulties.

Is it possible to run the listings for the Commodore 64 in 128 mode as I have a Commodore 128, or do they always have to be in 64 mode?

In some recent adverts in your magazine for modems, some are priced around £100, others are free, but require me to buy three months subscription. There must be a difference and limitations but, what are they?

A The most common symbols and the keys you press to get them are shown below. Some of them I have outlined with dots to show that the symbol is actually a square with two of the sides cut down. If you want more information try *Programming the Commodore 64* by Rae West, published by Level Computer Publications, PO Box 438, Hampstead, London NW3.

Shift + CLR/Home	
CLR/Home	C= + 4
Shift CRSR ⇕	C= + 5
CRSR ⇕	C= + 6
Shift CRSR ⇔	C= + 7
CRSR ⇔	C= + 8
CTRL + 0	F1
CTRL + 9	Shift F1
CTRL + 1	F3
CTRL + 2	Shift F3
CTRL + 3	F5
CTRL + 4	Shift F5
CTRL + 5	F7
CTRL + 6	Shift F7
CTRL + 7	←
CTRL + 8	Shift ←
C= + 1	
C= + 2	
C= + 3	

Programs written for the 64 generally won't run in 128 mode on the C128, especially if there are *Sys* calls involved. If, however, the program is simple Basic, then it probably will.

There are basically three types of modem advertised: the first, and most expensive, has multiple speeds, say 1200/75, 1200/1200 or 300/300, and you will be able to use it with any bulletin board, Micronet, etc. The second type is the single speed type having just 1200/75. This is generally for use with a teletext service such as Micronet. There are a few bulletin boards around that support this speed but certainly not all. This type is, however, about half the price of a multi speed one.

The third type is that sold along with a subscription. This is basically the same as the second type which, at around £50, is about the same as three months subscription, the idea being that once you have started using the service you are unlikely to stop after three months, especially if you are effectively tied to it by the type of modem you have.

Indirectly speaking

A Smith, of Harrow on the Hill, London, writes

Q I am learning to program in 6502 machine code having already mastered the Z80. I am somewhat confused by the term indirect addressing, so could you explain how this works?

A The Z80, as you probably know, does not have true indirect addressing. The nearest it gets is using one of the register pairs to hold the address at which you want to load or save something. True indirect addressing is where the address of the memory location to be operated on is held in memory.

To store something at, say, *$EA01* you could either simply *STA $EA01* or indirectly put the address in memory at, say, *$A1* and *$A2*; the instruction would then be *STA ($A1)*. What the processor does is to look at location *$A1* and get the contents. This forms the lower byte of the 16 bit address.

It next gets the contents of location *$A2* and uses this as the high byte of the 16 bit address. Having found the address, it then performs the operation.

On the 6502, things are not quite as simple as this since the indirect operations are always in conjunction with the X and Y index registers (apart from jump indirect *JMP (address)*). The options are post indexed indirect, *(address) Y* and pre-indexed indirect *(address X)*.

Post indexing simply gets the address from the memory locations, which must be in the zero page (memory from 0–255 is zero page), as before. The contents of the *Y* register are added to this address to give the effective address, or the address at which the operation is to be performed. For example:

```
STA ($A1) Y where Y contains 6
$A1 contains $01
$A2 contains $EA
```

The address *$EA01* has the contents of the *Y* register added to it to give the effective address *$EA07*, so the contents of the accumulator are stored in *$EA07*.

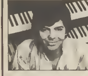
By adding the contents of the *Y* register to the zero page address following the instruction, and then using this value as the address where the effective address is stored. For example:

```
LDA ($A1 X) where X contains 4
X is added to $A1 to produce the
address $A5
$A5 and $A6 contain the effective
address to be used e g
$A5 contains $01
$A6 contains $EA
```

So the contents of the address $EA01 are loaded into the accumulator.

Indirect addressing is useful for accessing tables of information. The pre indexed version can access data spread all over the memory simply by having a table of addresses, each pointing to a piece of data. The post indexed method is useful for accessing different tables spread around the memory. Simply put the address of the relevant table in the zero page, then use this along with the *Y* register to access it.

Is there anything about your computer you don't understand and which everyone else seems to take for granted? Whatever your problem *Peek* it to Kenn Garroch and every week he will *Poke* back as many answers as he can. The address is *Peek & Poke, PCW,* 12-13 Little Newport Street, London WC2H 3LD.



So much more for your 64

Mark Jenkins expounds on the Expander and answers some of your letters

The Commodore 64 remains one of the most popular music micros, simply because the choice of high quality add-on hardware is so great. Commodore's own models, the FM *Sound Expander* and Keyboard, are justifiably popular although from the time the *Expander* was first launched, the call has been for a software package which made it possible to edit its synthesizer sounds.

The wait is over, because the FM Editor/Composer is now with us. This disc allows you to compose polyphonic music, to edit it, to assign Midi channels for its playback, and to create new sounds to play it with.

The Composer section opens with a double music stave which allows you to choose a key signature, tempo, voice to be used and so on. Notes are then programmed using the computer's keyboard or the Commodore music keyboard; you can enter one part at a time and edit notes, copy blocks and so on.

The FM/Midi page assigns each of the eight FM voices plus percussion to a Midi channel and decides whether you want to clock the music internally or externally (say, from a Midi drum machine). There's a new set of 84 internal FM voices which are far superior to the original set, and you can save and load music and voices.

The voice editing software is separate on the disc, and the setup facility allows you to choose an upper and lower sound split point, tranposition, percussion on/off and Midi on/off. After that stage you go on to the Edit page proper which has bar graph displays for Brightness, Envelope, Pitch 1 and 2, Vibrato 1 and 2, Tremolo and other parameters.

The drum machine section allows you to create kits from a selection of sounds and write patterns on a graphic display of a single bar. There's also a rather wonderful Fruit Machine section, which matches up sounds at random and gives you the opportunity to edit them into something really useful.

Overall this package is a very valuable addition to the FM Sound *Expander*. Not only is it a compulsory purchase for existing *Expander* owners, it's also going to make the whole system much more attractive to potential purchasers who found the original setup a little limited.

A pity that the sound editing facilities are so basic – they do give you a lot of possibilities, but nothing on the scale of the 147 sound parameters offered to users of the DX7. Still, you can't have everything.

The *Sound Expander* has cropped up in several readers' letters recently, notably one from Steve Bell of Durham who takes exception to our basic classification of micro musicians into three categories – beginner using sound chip software, intermediate types splashing out on add-on hardware and keyboard, and advanced composers using Midi interfaces and semi-pro synthesizers. Steve sold a Commodore *Sound Expander* and sampler in favour of a Casio CZ1000 synth and Roland TR505 drum machine, but continues to use the C64 with a Datel Midi interface and Rainbird Advanced Music System software. While the software plays the synth, the drum machine plays itself, and Steve plays guitar.

Steve's now looking for a sequencer package with a similar graphic input method to the Rainbird and step time note entry as well as real time. Unfortunately we don't know of such a package which supports Midi as yet – most Midi packages steer clear of scrolling music staves because of the vast amount of information involved in transcribing polyphonic tracks.

However, Steinberg's Pro 16 (on disc or EPROM) will record in real or step time, and you can transfer its files to the TNS Note Editor for transcription. Alternatively you can get hold of C-Lab, which is the most powerful C64 composition package about at the moment, although it doesn't offer musical notation.

Steve suggests an exchange scheme for users of certain software packages, so if anyone would like to exchange files (together with notes of what type of sounds are played by what channels) we'll be happy to put you in touch with each other. Steve also asks about sheet music suppliers for chart material, and Music Sales (the distributors of the Commodore Expander) are probably the best bet here.

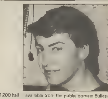
A brief letter from Neil Belfitt asks what drum packages are compatible with the Commodore *Sound Expander*. The answer is, of course, none – in that you can't run any C64-based drum package at the same time as *Expander*. The Tron Digidrum probably has the edge on Datel Comdrum, otherwise, so your solutions are to buy a second micro to run one of these, go for a dedicated drum machine such as the tiny and inexpensive Roland DD-220, or edit drum sounds using the FM Editor/Composer discussed above.

And a Mr Anglin of Stoke Newington wonders whether the Casio CZ230S synth may not be a better buy than the CZ101 for computer control. Well, the 230 is a little more expensive in most shops, but has an excellent programmable PCM sampled drum machine built in. It offers 99 synth sounds, of which only the last four can be re-programmed, and then only using CZ editing software from Steinberg, Joreth or similar. It has eight voices, can play four different mono voices on different Midi channels in solo mode, and in fact sounds exactly the same as the CZ101. But you can't save the PCM drum sounds to a micro (you can save the patterns to tape, however, and can make up synth drum sounds which can be saved to the micro and mixed with the drum machine beats). So overall, the main factor in choosing between the 230S and the 101 is whether the drum machine is important to you, or whether you'd prefer to keep it on-board your micro by using a Tron Digidrum, Datel Comdrum or FM Sound Expander.

Steinberg, The Spendlove Centre, Charlbury, Oxford OX7 3PQ, 0608 811323. Music Sales, 78 Newman Street, London W1F 3LA, 01 631 1645.

If you have any queries or tips for this column, please write to Mark Jenkins at Popular Computing Weekly, 12–13 Little Newport Street, London WC2H 7PP. Mark would also welcome examples of your own music on audio or program tape or disc.

The public domain of communications



David Wallin answers electronic and snail mail from readers

Today I've got more answers for you. Some are to letters that have been sent in and some to queries left on Prometheus.

For those of you who don't know about Prometheus it's a viewdata board which specialises in astronomy. It also has a *Popular Computing Weekly* section where I can be left questions, comments etc. Answers will be printed on the board as soon as possible. Contacting me via Prometheus is much much quicker than by snail mail, and for Londoners it may well be cheaper. The number of the board is 01 300 7177 Viewdata format. To reach my section type *08# at any time or select option eight from the main menu.

Someone who goes by the name of Bill has left a question asking for information on the availability of scrolling (Ascii) type BB software for the Spectrum. Well, assuming that you have a VTX5000 modem, Modem House has two packages: VTX PSS which costs £7 and gives Ascii emulation and VTX user-to-user which costs £4 and is for user-to-user communications at 1200/1200 half duplex.

Both are supplied on tape and Modem House's address is 70 Longbrook Street, Exeter, Devon EX4 6AP. Micronet 800 also has Ascii terminal emulation software available for download which may be of use if you are a member.

There was at one time an Ascii emulation package available from Stephen Adams who runs the Spectrum Bulletin Board, the number of which is at the bottom of this article. It may no longer be available, but contacting Mr Adams will enable you to find out.

Next, Mike Leek wants to know where he can get *XModem* or *Modem7* (public domain communications software) for the Amstrad CPC 6128 and configure it to work with the Cirkit Prestel interface. *XModem* is available for the 6128 under the name of *CPCUKM7.COM*. However I don't know how you could configure it for the Cirkit interface and hardware modifications to the interface may be necessary.

If you want to try the software is available from the public domain Bulletin Boards, but unfortunately most of these are not viewdata systems and I would assume that you only have viewdata compatible software. Two boards with Amstrad sections which are viewdata compatible are the Dark Crystal and the London Underground. Their numbers are 01 954 9847 and 01 863 0199 respectively.

A new piece of PD comms software available for the CPC 6128 is *Mex* — Modem Executive. This is very powerful as PD comms software goes. It includes a form of JCFs/Tasks and can run a CP/M application whilst on-line without causing a disconnection. I hope that one of the two programs will be of help, Mike; if not let me know and I'll dig further.

Phil Rice wants to know if Dragon comms software is still available? Yes it is. Modem House does a cartridge for viewdata comms at £35 and Tandata has an Ascii and viewdata (monochrome only) cartridge for £45. So yes, you can still communicate on the Dragon.

Amstrad communications package released

Hot news for Amstrad PC1512 owners, and those who would like to join them if they could get hold of a machine.

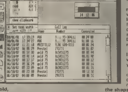
Digital Research has launched a communications package, specifically for the machine, running under Gem.

DR, producer of the Gem software system, commissioned the package from Vicom, author of the highly acclaimed Macintosh program of the same name.

***Gemcomm* is stuffed with features, all of them conforming to the Gem standard.**

For example, you can create log-on files for any on-line service such as Prestel, Telecom Gold, or US services like Compuserve.

These files hold the telephone number, your password and ID number, baud rate and other protocols.



You give each one a name, then whenever you want to connect to the service you simply enter the name and sit back while the PC does all the work.

You can compose messages, telexes and viewdata frames off-line, as well as grabbing frames and text while on-line so you can inspect them later. Doesn't half keep connection costs down.

There's also a phone log (pictured here) which keeps track of all your comms activity.

At only £99.95, including Vat, it looks like outstanding value for money. It should be in the shops now.



A thousand years of stalking the King

Martin Bryant discusses the myriad ways to check-mate, self-mate, help-mate

This week I will take an introductory look at chess problem solving and the role computers play in this fascinating field. Because of the complexity of the subject one cannot cover it completely in one article so I will look at the current best programs and various studies of solving ability in future weeks. I will concentrate here on the history of chess problems and the basic concepts.

It is known that some manuscript collections were made over a thousand years ago. However in the early days there was little differentiation between problems and composed endgames. Up to the last century the solutions were mainly a series of checks with many sacrifices – the type of manoeuvring that would be considered brilliant in a real game. Nowadays the solutions are much less obvious preferably involving as obscure a move as possible.

So to the basics. What exactly are chess problems? There are certain conditions which problems must satisfy to be considered correct. The most important is that there be one – and only one – solution. If a problem is found to have more than one answer it is considered spoiled. The exact form the problem takes is open to wide variation though. Unless you have done some study of the field you would probably be surprised by the range of weird and wonderful types of problem devised to tax the chess enthusiast's brain (and the computer's cpu). Apart from the normal "Mate in N" category there are such things as self mates, help mates, series mates and even fairy mates. This last group involves "subversive" pieces which can cause an opponent's man to attack their own king! Some other problems have been designed which actually involve over 100 moves!

Let us first look at a simple normal mate. White is to move first and checkmate Black against any defence in two moves (see diagram one).

This problem is taken from the Bonus Socius (Good Companions) manuscript which is one of the earliest known collections of chess problems printed around 1266. The solution is 1 Rh7–g7. Whatever Black then does, White has a checkmate next move. Many computer chess programs available today have the ability to solve problems of this nature. Their speed may vary greatly though and if a program takes more than a couple of seconds on a "Mate in 2" it is probably not worth the Ram it sits in. Also the best programs are able to search for multiple solutions not just the first one it finds.

Diagram one (above): the moves to white check mate

Now let us try a self-mate. Here the side moving first does not checkmate the opponent, but forces the opponent to checkmate him instead. So in this next problem White is to move first and force Black to mate him in two moves (see diagram two).

Diagram two (below): the theory of self mate

The first move of the solution is 1 Qf8–b4. Now Black has no way to avoid mating White eg 1 – Qd8–f6+ 2 Nh1–f2+ forces Qf6Xf2 Checkmate.

Help-mates are the easiest type to demonstrate. Here both sides cooperate to mate the first side to move. Just take a chess board set up in its opening position and it is a help-mate in two. Ever heard of "Fool's Mate"? It goes 1 Pg2–g4 Pe7–e5 2 Pf2–f3 Qd8–h4 Checkmate! This brings me to the role of computers in chess problem solving.

If problem designers find more than one solution to their problems they will adjust it until the rogue solutions have been eliminated. At this point a computer program can be of great assistance. Instead of racking their brains for hours to be "reasonably sure" (and then not certain) that only one solution exists they can just get the program to search for all possible solutions and modify the problem if necessary.

Some people consider using programs to solve problems pointless because it takes away the "pleasure" of finding the solution. I disagree. I am much too lazy to plough through hundreds of problems working them out myself. Even if I look up the answer I sometimes cannot refute some variations without noticeable effort. By using a program to analyse difficult lines I can appreciate quickly and easily the beauty of the problem and the ingenuity of its author. After studying hundreds – perhaps thousands – of problems with the help of my programs I have an appreciation of chess problems I would never otherwise have had and a great respect for the authors' ability to create such ingenuity on a chess board.

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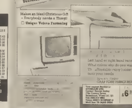
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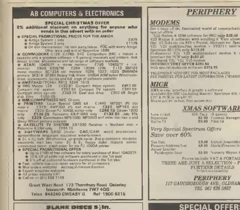
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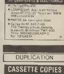
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Program *Answer Back Junior Quiz* **Type** General Knowledge Quiz **Price** £9 95 tape £13 95 disc **Micro** All Amstrad CPCs **Supplier** Kosmos 1 Pilgrims Close Harlington Dunstable Beds LU5 6LX

Program *Cop Out* **Type** Arcade **Price** £8 95 tape, £13 95 disc **Micro** All Amstrad CPCs **Supplier** Mikro Gen Unit 15 The Western Centre Western Road Bracknell Berks RG12 1RW

Program *They Stole a Million* **Type** Strategy/Adventure **Price** £8 95 **Micro** All Amstrad CPCs **Supplier** Ariolasoft 68 Long Acre Covent Garden London WC2E 9JH

Atari XL/XE

Program *Los Angeles SWAT* **Type** Arcade **Price** £1 99 **Micro** Atari 800XL 130XE **Supplier** Entertainment USA Mastertronic address as above

Program *Chicken Chase* **Type** Arcade **Price** £2 99 **Micro** Atari 8-bits **Supplier** Bug Byte address as above

Program *Back to Reality* **Type** Arcade **Price** £1 99 **Micro** Atari 8-bits **Supplier** Mastertronic address as above

Pick of the week

A hearty game

Program *Heart of Africa* **Type** Graphic Adventure **Price** £14 95 disc **Micro** Commodore 64/128 **Supplier** Ariolasoft Long Acre Covent Garden London WC2

If Infocom is the top US adventure label and Epyx the undisputed leader in arcade games Electronic Arts must be top of the strategy league

Following its earlier masterpieces like *Archon Seven Cities of Gold* and the brilliant *Bard's Tale* (see Games this week) comes *Heart of Africa*

Like other Electronic Arts products it s distributed here by Ariolasoft And it s well up to the now-expected high standard

It has a lot in common with *Seven Cities* but there are many differences apart from the obvious shift of continent

You have been chosen to inherit the wealth of African explorer Hiram Perkins Primm But to get the houses yachts and bank accounts you have to complete his life s quest to discover the lost tomb of Pharaoh Ankh Ankh

The natives are more or less friendly the wildlife almost unanimously hostile and your expedition will contend with disease starvation sinking canoes baking deserts and sundry other hazards

The compensations are extra funds when discoveries are made and the excitement of exploration and a good detective story

It looks like another winner

Atari ST

Program *Winter Games* **Type** Simulation **Price** £24 95 **Micro** Atari ST **Supplier** US Gold Unit 2 and 3, Holford Way Holford Birmingham B6 7AX

Program *Phantasie* **Type** Role Playing Adventure **Price** £24 95 **Micro** Atari ST **Supplier** Strategic Simulations via Silica Shop 1–4 The Mews Hatherley Road Sidcup, Kent DA14 4DX

Program *War Zone* **Type** Arcade **Price** £19 95 **Micro** Atari ST **Supplier** Paradox 49 Rhodes Avenue London N22 4UL

Program *ST Protector* **Type** Arcade **Price** £19 95 **Micro** Atari ST **Supplier** Paradox address as above

BBC B/Electron/Master/Compact

Program *Skyhawk* **Type** Arcade **Price** £1 99 **Micro** BBC/Electron **Supplier** Bug Byte address as above

Program *The Musicsoft Collection* **Type** Utility **Price** £19 95 **Micro** BBC B **Supplier** Duckworth The Old Piano Factory 43 Gloucester Crescent London NW1 7DY

Program *RamRod* **Type** Utility **Price** £37 00 **Micro** BBC

Master Compact **Supplier** Clares Micro Supplies 98 Middlewich Road Rudheath Northwich Cheshire CW9 7DA

Program *Repton 3* **Type** Arcade Adventure **Price** £9 95 tape £11 95 disc £14 95 3½ inch disc **Micro** Acorn Electron BBC B BBC Master Compact **Supplier** Superior, Regent House Skinner Lane Leeds LS7 1AX
Bug Byte address as above



Program *Fontwise Plus* **Type** Utility **Price** £22 00 **Micro** BBC Master Compact **Supplier** Clares Micro Supplies address as above

Program *Fontwise Font Editor* **Type** Utility **Price** £22 00 **Micro** BBC Master Compact **Supplier** Clares Micro Supplies address as above

Program *Artroom* **Type** Utility **Price** £27 00 Master Compact £25 00 Master 128 **Micro** Acorn Master Compact Master 128 **Supplier** Clares Micro Supplies address as above

Commodore 64/128

Program *Bugsy* **Type** Graphic Adventure **Price** £7 95 **Micro** Commodore 64 **Supplier** CRL 9 Kings Yard Carpenters Road Stratford, London E15

Program *Panther* **Type** Arcade **Price** £2 99 **Micro** Commodore 64/128 **Supplier** Entertainment USA Mastertronic, address as above

Perhaps an undistinguished shoot-em-up apart from the soundtrack, Panther nonetheless provides a fair amount of entertainment for its budget price and kept me occupied to the point where the alien fighters became impossibly fast and frantic for my arthritic fingers

Panther presents a view of a reasonably colourful and detailed landscape shown from a three-quarters on angle Your fighter skims along blasting waves of aliens and making landings to pick up survivors of the alien attack In this respect *Panther* is somewhat like *Choplifter*

The aliens fire whirling energy bolts and follow you until you slow down to do battle with them There s a radar screen to warn you of incoming hostiles and various score displays plus lots of different backgrounds including seas dotted with oil platforms which present difficult landing spots

Lotsa zapping fun and graced by a sophisticated soundtrack which unless my ears deceive me, must be by David Piano Tie Whittaker

Program *Dracula* **Type** Adventure **Price** £7 95 tape £12 95 disc **Micro** Commodore 64/128 **Supplier** CRL 9 Kings Yard Carpenters Road Stratford London E15

Program *Heart of Africa* **Type** Graphic Adventure **Price** £14 95 disc **Micro** Commodore 64/128 **Supplier** Ariolasoft Long Acre, Covent Garden London WC2

Program *Alien* **Type** Strategy **Price** £1 99 **Micro** Commodore 64 **Supplier** Bug Byte, address as above

Program *Flash* **Type** Arcade **Price** £2 99 **Micro** Commodore 64 **Supplier** Mastertronic address as above

Program *Storm* **Type** Arcade **Price** £1 99 **Micro** Commodore 64 **Supplier** Mastertronic address as above

Program *They Stole a Million* **Type** Strategy/Adventure **Price** £8 95 **Micro** Commodore 64/128 **Supplier** Ariolasoft 68 Long Acre Covent Garden London WC2E 9JH

Program *Judge Dredd* **Type** Arcade **Price** £9 95 tape £14 95 disc **Micro** Commodore 64/128 **Supplier** Melbourne House 60 High Street, Hampton Wick Kingston upon Thames Surrey KT1 4DB

It s a good 18 months since the idea of producing a computer game version of Judge Dredd was mooted but here it is at last from Melbourne House

Chaotic is probably the best word to describe this implementation appropriately enough considering the original comic strip Frenetic music plays as you hurtle from location to location trying to prevent eight crimes occurring in each level

The solid graphics and well animated characters (you, the baddies rats and robodogs) do much to disguise the fact that this is dressed up platforms and ladders played at a heir-raising pace

In keeping with his origins the Judge occasionally has balloons coming out of his mouth with some suitably tough-guy statement (one of them looked rather rude but it turned out to be only Blam)

Judge Dredd fans will probably enjoy this extension of the comic for others it doesn t promise anything remarkably novel

Program *Yie Ar Kung Fu 2* **Type** Arcade **Price** £5 95 **Micro** Commodore 64 **Supplier** Imagine 6 Central Street Manchester M2 5NS

Judging by this effort martial arts games must be nearly played out by now *YAKF 2* adds little or nothing to other games such as *Kung Fu Master, Fist 2* or indeed *YAKF 1*

Most disappointing is the general standard of design and animation of the characters Most of them are blobby and uninteresting, and move with clumsy jerks The flying midgets look like pigs heads for some reason

There s a two-player option – which hero Lee Young can be played against the fierce warlords such as Iron Pigtails Yen-Pel (I kid you not) – but the relatively limited number of fighting moves available and the slowness of response means that this is too imprecise to be any fun, and the thrill of looking for magic teasleeves and noodles to restore your fighting energy isn t quite enough

Not even Martin Galway s twangy Yellow Magic Orchestra-inspired soundtrack can do much to retrieve it

Program *Aardvark* **Type** Arcade **Price** £1 99 **Micro** Commodore 16 **Supplier** Bug Byte Victory House Leicester Place, London WC2H 7NB

As we all know, the aardvark is the world s most intelligent and charming animal Why then has it taken this long for someone to write a computer game starring the adhesive tongued creature?

At any rate *Aardvark* the game is one of those programs which looks awful and is in fact deeply wonderful The aardvark itself sits at the top of the screen and you control his sticky tongue as it quests through the ant hill Slurping up eggs racks up the points and catching fast moving ants gains even more

But beware if the ants bite your extended tongue you lose a life and if you swallow a wriggly worm back to front you ll choke on it Spiders pursue your tongue around the screen and only by catching a queen spider can you see off all your enemies

MSX

Program *Ole* **Type** Arcade **Price** £1 99 **Micro** MSX **Supplier** Bug Byte address as above

Program *Chicken Chase* **Type** Arcade **Price** £1 99 **Micro** MSX **Supplier** Bug Byte, address as above

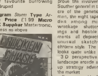
continued on page 76 ▶

New Releases

▶ continued from page 75

Devoid of pretty music flashy effects or complex coding *Aardvark* nonetheless had us all in stiches as the ant-chase became more and more frantic Buy a copy for your favourite burrowing quadruped

Program *Storm* **Type** Arcade **Price** £1 99 **Micro** MSX **Supplier** Mastertronic, address as above



Spectrum

Program *Cop-Out* **Type** Arcade **Price** £8 95 **Micro** Spectrum 48/128 **Supplier** MikroGen Unit 15 The Western Centre Western Road, Bracknell Berks RG12 1RW

Program *Phantomas* **Type** Arcade **Price** £1 99 **Micro** Spectrum 48K **Supplier** Code Masters address as above

Program *Vampire* **Type** Arcade **Price** £1 99 **Micro** Spectrum 48K **Supplier** Code Masters address as above

Program *Rogue Trooper* **Type** Arcade Adventure **Price** £9 95 **Micro** Spectrum 48/128 **Supplier** Piranha 4 Little Essex Street, London WC2R 3LF

Greasing Norts is the name of the game in this stylish adaptation of *2000 AD*'s future war comic strip Genetic infantryman Rogue must fight his way through the hostile environment of Nu Earth fighting off enemy Norts and his own Souther troops who regard him as a traitor To the top left is a screen giving a local map display to the right a status area showing the amount of ammunition number of medical packs and number of videotapes recovered

The tapes are the objects of Rogue s quest needed to prove the involvement of a Souther general in the massacre of the genetic infantry men, the eight tapes are hidden among minefields wreckage shattered buildings and hostile environments all depicted in an unusual sketchy monochrome style The end result looks quite unlike any other 3 D perspective scrolling landscape arcade shoot-em-up strategy adventure on the market

Programmed by Design Design and faithful to the original comic strip – the biochipped buddies Helm Cunnar and Bagman throw in the odd warning of danger or piece of advice – Rogue Trooper is so good you can almost taste the ChemClouds as you wade through the Scum Sea

Program *The Ice Temple* **Type** Arcade Adventure **Price** £7 95 **Micro** Spectrum 48/128 **Supplier** Bubble Bus 87 High Street Tonbridge Kent TN9 1RX

Program *Alien* **Type** Strategy **Price** £1 99 **Micro** Spectrum 48K **Supplier** Bug Byte address as above

Hold your horses – this isn t *Aliens* the game of the sequel, due out soon(ish) from Electric Dreams, but a re-run of *Alien singular now out on Bug Byte s budget label*

When originally released by Bug Byte stablemate Mind Games Alien received a pretty mixed bag of reviews The graphics were well let s say utilitarian the game play ponderously slow to start with

All this is still true but there is actually a good game in here struggling to get out Once the action gets going with your characters spread out about the spaceship wondering who the alien is going to get next becomes absorbing and, surprisingly in a computer game, very suspenseful

It s no good at all if you want flashing lights and hip hop sound effects whizzing from one multi coloured screen to the next If anything it s more like one of those board games that you don t start playing unless it looks as though the rain s set in for the whole weekend

Worth considering at £2 99

Program *They Stole a Million* **Type** Strategy/Adventure **Price** £6 95 **Micro** Spectrum 48/128 **Supplier** Ariolasoft address as above

Program *Colossus 4 Bridge* **Type** Card Game Simulation **Price** £11 95 **Micro** Spectrum 48/128 **Supplier** CDS CDS House Beckett Road Doncaster DN2 4AD

Program *Maelstrom* **Type** Arcade **Price** £7 95 **Micro** Spectrum 48/128 **Supplier** Ocean 6 Central Street Manchester M2 5NS

Program *The Press* **Type** Adventure Utility **Price** £6 95 **Micro** Spectrum 48/128 **Supplier** Gilsoft 2 Park Crescent Barry, South Glamorgan CF6 8HD

And *The Quill* story goes on

Having had *The Quill* itself *The Illustrator* and *The Patch* we now have *The Press*

This latest component in Gilsoft s adventure-writing library is a text compressor which allows you to get far more text into your *Quill* d adventures than was previously possible

The package includes a companion program called *Expander* which allows you to add further text beyond the current upper memory limit

By using these two utilities together – by subsequently expanding and compressing your text – Gilsoft says you should be able to create 40K of text-only adventure

Furthermore *The Press* adds many of the existing features of *The Patch* so you may be able to drop the latter package from your shopping list

Among these extras are six sound effects two kinds of key beeps the ability to use alternative typefaces, picture on and picture off commands and Ram load and save

The manual is necessarily complex but well-written and implementing these features should not be difficult provided that you understand *The Quill* and *The Illustrator*

There are one or two drawbacks There s a problem with Basic keywords – *In Out Paper* and so on – which must not be used anywhere in your adventure text

The time taken by *The Press* can run from half an hour to ten hours depending on the size of the database and on whether you use *Fast* or *Slow* compression *Slow* gives a better result provided you can find something else to do for ten hours

And the obvious drawback is that having to implement three or four different programs has taken *The Quill* a long way from the original idea of having an easy-to-use general utility

I hope that Gilsoft will soon take the trouble to do an extensive re write of the whole affair and produce one coherent program

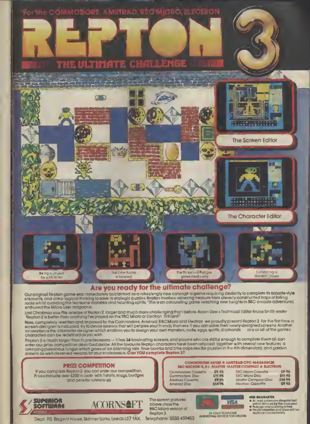
That said, *The Press* can only add to the continued success of *The Quill*

Aficionados will no doubt love it

Program *Terminus* **Type** Arcade **Price** £2 99 **Micro** Spectrum 48/128 **Supplier** Mastertronic address as above

Program *Speed King 2* **Type** Simulation **Price** £1 99 **Micro** Spectrum 48/128 **Supplier** Mastertronic address as above

Program *The O Zone* **Type** Adventure **Price** £2 50 **Micro** Spectrum 48/128 **Supplier** Compass Software 36 Globe Place Norwich Norfolk NR2 2SQ


For the COMMODORE, AMSTRAD, BBC MICRO, ELECTRON
REPTON 3
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The Character Editor
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The Time Bomb is located
The Poisonous Fungus grows insidiously
Collecting a Golden Crown
Are you ready for the ultimate challenge?
Our original Repton game was immediately acclaimed as a refreshingly new concept: a game requiring dexterity to complete its arcade-style elements, and clear logical thinking to solve its strategic puzzles. Repton involves retrieving treasure from cleverly-constructed traps of falling rocks whilst avoiding the fearsome monsters and haunting spirits. "This is an astounding game reaching new heights in BBC arcade adventures," enthused the Micro User magazine.
Last Christmas saw the release of Repton 2, larger and much more challenging than before. Acorn User's Technical Editor Bruce Smith wrote: "Repton 2 is better than anything I've played on the BBC Micro or Electron. Brilliant!"
Now, completely rewritten and improved for the Commodore, Amstrad, BBC Micro and Electron, we proudly present Repton 3. For the first time, a screen-designer is included: try to devise screens that will perplex your friends, then see if you can solve their newly-designed screens. Another innovation is the character-designer which enables you to design your own monsters, rocks, eggs, spirits, diamonds ... any or all of the game's characters can be redefined as you wish.
Repton 3 is much larger than its predecessors — it has 24 fascinating screens, and players who are skilful enough to complete them all can enter our prize competition described below. All the favourite Repton characters have been retained, together with several new features: a creeping poisonous fungus which grows at an alarming rate, time bombs and time capsules (for puzzles in the 4th dimension), and golden crowns as well-deserved rewards for your endeavours. Can YOU complete Repton 3?
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The copyright question

The perennial poser about software copyright and the right or otherwise of a buyer to copy software has raised its head again in our Letters page (see page 14 this week).

The debate, sadly, seems endless with the same old arguments being trotted out on both sides.

There are some of us (well me at any rate) who believed and still believe that software publishers had adequate recourse to the law without further tinkering with the Copyright Act and other legislation.

Quite simply, unless the publisher specifically says anything to the contrary, you can't copy software.

But so far as I'm aware, nobody in the world has been prosecuted for copying software provided that the copy was for their own use. Indeed, within both the letter and the spirit of the law, many more people are liable for prosecution than are actually being caught.

The law is being applied to catch the professional pirates. Which is not to say that because you're not selling hundreds of copies down the market on Saturday, you can give copies to your friends, receive other copies in return and everything's fine.

Arguments about security back-ups of games cassettes just don't wash. I've been using cassette software for more than four years and never had a tape go wrong. *Popular Computing Weekly* does not accept advertisements for tape-to-tape copiers. We simply don't see a legitimate use for them.

Disc-based software is a different matter. Computer discs are the most mischievous critters in the known universe. You can walk on them, stand a magnet on them, pour coffee on them and often they'll continue to work perfectly. Equally, you can destroy one with a stern look or a harsh word.

But other arguments apply. It doesn't seem unreasonable for a software company to copy-protect a games disc provided that it is prepared to replace that disc if something goes wrong. Going without a game for a week or so is no great hardship.

But professional software is different. If your livelihood depends on your having access to a program and its data, you would be foolish to buy copy-protected software. If a disc fails, it's essential that you have another to hand – right now.

The catch here for software companies is that business users are among the worst software copiers. Firms which buy one copy of *Wordstar* and then make 20 copies for their employees are commonplace. It's not unknown for a firm to have 21 copies of *Wordstar*, never having bought an original.

The dilemma with business software is that the users have a genuine grievance if they can't make back-ups, but the software houses have a fair case for preventing it because they're losing thousands of sales.

My suggested answer to this is to buy only unprotected software – and don't give away copies. Or accept them.

Of course, many computer users will continue to trade copied software.

But spare us the self-righteous arguments. Especially the one about high prices. Defending piracy on the grounds that the software costs too much is like saying it's okay to steal a Rolls-Royce because it costs more than your Ford Escort.

Theft is theft, whether you use a crowbar or a bit-copier.

The last word on the subject (some chance!) is to repeat: play fair by the software companies. Accepting a copy from a friend to check out a program doesn't hurt anyone in itself.

If you like the software, go out and buy it. That way the copy makes a sale and everyone is happy. If you don't like it, throw it away or record over it. No harm done.

But habitually using copies instead of buying the software is stealing. Stealing from the software house and stealing from the programmer.

But if you're going to be a thief, be an honest one. No justifications, no waffle about high prices, no glamorising to your friends about cracking the code.

Just tell them you steal software.

Peter Worlock

NEXT WEEK

SPECIAL SUPPLEMENT

Buyers' guide to hardware

If you're hoping to get a computer for Christmas, or planning to treat yourself, then you can't afford to miss *Popular's* Hardware Buyers' Guide.

There'll be a comprehensive guide to the Big Ten computers on the market – the Plus 2s, the CPCs, the PCWs, Commodores, Ataris and Acorns.

If you're not so interested in the mainstream home micros, try the guide to games consoles. Or if you want something more up-market, we look at the present boom in cheap IBM PC compatibles. And if money's a bit tight, we've got a survey of some of the micro bargains around at the moment.

Hardware

Amstrad isn't the only company with a newly launched PC compatible. Tandy's 1000EX comes into exactly the same category.

Movie Quiz

We name names and cite the winners of the Spectrum Plus 2s, the Star printers, and the Mastertronic joysticks in our Grand Autumn Movie Quiz.

Hackers



Fairlight



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